Serious Mental Illness Treatment Research and Evaluation Center (SMITREC)
Health Services Research and Development Center of Excellence
P.O. Box 130170
Ann Arbor, MI 48113-0170
Phone: 734-769-7100, extension 6247
Fax: 734-761-2617

Specialty Care for Veterans with

Depression in the VHA

2002 National Registry for Depression (NARDEP) Report

Frederic C. Blow, PhD, Director, SMITREC
Richard E. Owen, MD Director, VA Mental Health QUERI

Investigative Team:
Marcia Valenstein, MD, MS
Karen Austin, MPH
Kiran Khanuja, MD
John F. McCarthy, PhD

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Chapter 1: Report Overview, Structure, and Background

Rationale for a Depression Registry

Depression is one of the most common medical disorders, with a point prevalence iof 4.8% to 8.6% among community residents. Men have a lifetime prevalence of 7% to 12% and women have a lifetime prevalence of 20% to 25% (Kessler et al. 1994). Depressive disorders are associated with functional impairment and increased health care utilization (Johnson, Weissman, and Klerman 1992; Murray and Lopez 1996; Simon, VonKorff, and Barlow 1995).

Depressive symptoms and disorders are common among the veteran population. According to the Veterans Health Study, the prevalence of significant depressive symptoms among veterans is 31%; two to five times higher than in the general US population, depending upon the age group and locale of diagnosis (Hankin et al. 1999). In 2002, more than 4.5 million people were treated in VA healthcare facilities (http://www.va.gov/opa/fact/docs/vafacts.htm); 542,075 or 12% of these patients were diagnosed with depression.

Recognizing the widespread prevalence, morbidity, and high costs of depression, the Serious Mental Illness Treatment Research and Evaluation Center (SMITREC) collaborated with the Mental Health Quality Enhancement Research Initiative (QUERI) to develop a VA National Depression Registry in 2001. This activity was consistent with SMITREC's mission of monitoring and evaluating the care of seriously mentally ill veterans and providing policy makers with data to assist them in improving care. The activity was also complementary to the mental health QUERI's goal of creating a data-driven national program to improve the quality of care for veterans with major depression disorder (MDD) and schizophrenia.

The VA National Registry for Depression (NARDEP) is modeled after SMITREC's first national patient registry, the VA National Psychosis Registry (NPR), and is a comprehensive database of veterans with depressive disorders receiving treatment in the VA..

Overview and Structure of the Depression Registry

Patients with depressive disorders were identified for the Depression Registry, using data from the VA Patient Treatment File (PTF), Bed Census Files, and Outpatient Care Files (OPC) located at the Austin Automation Center in Austin, Texas. All veterans diagnosed with depressive disorder (qualifying ICD-9 codes, 311, 296.3, 300.4, 296.2 , 309.0, 293.83, 296.90, 309.1, 296.99, 301.12) in either inpatient or outpatient settings from Fiscal Year 1997 through 2002 (FY97- FY02) were included in the registry. The majority of patients had diagnoses of MDD, single and recurrent; dysthymia, or depressive disorder not otherwise specified (NOS). (See appendix A for list of qualifying diagnoses).

NARDEP includes data on patients' demographics, inpatient and outpatient services use, medication use, health care costs, and mortality. Data come from a variety of VA administrative datasets, including the PTF and OPC datasets (demographic, diagnostic, services utilization data), the Allocation Resource Center (cost data), the Pharmacy Benefits Management Group (outpatient medications), the Beneficiary Identification and Records Locator System (mortality data), and the Planning Systems Support Group (distance to service facilities).

A total of 542,075 veterans were diagnosed with depression during a visit to specialty care or primary care in FY02. 331,399 of these patients had at least one visit with a diagnosis of depression in specialty mental health settings, while 210,676 had a visit with a diagnosis of depression only in primary care. We excluded patients from the depression registry who had a diagnosis of Bipolar I during the year, leaving 305,122 patients receiving treatment in specialty mental health and 204,272 receiving treatment only in primary care. Approximately 47,860 patients who received a diagnosis of depression only in primary care setting were seen in specialty care, but received a different psychiatric diagnosis.

Given SMITREC's focus on the patients with serious mental illness, the 2002 NARDEP Report focuses on the 305, 122 of the 542,075 patients with depressive disorders who were seen at least once in specialty mental health settings in FY02. Specialty patients are more likely to have moderate to severe depressive disorders (Kessler et al. 2003). However, we present limited information in Chapter 8 on the 204,272 patients who received a diagnosis of depression only in a primary care setting.

Note: (Mental health and primary care settings were defined using VA clinic stops and bed section codes; see Appendix A for the list of clinic stops and bed section codes used to define locale of mental health care).

Limitations

Using administrative data to monitor patient care has both advantages and disadvantages. Administrative data are readily available, relatively inexpensive to obtain, and can be used to monitor large populations, such the population of patients receiving depression treatment in the VA.

However, administrative data have significant limitations. VA administrative data contain few clinical or functional data, aside from diagnostic information (ICD-9 codes) and Global Assessment of Functioning (GAF) scores. Chronic medical conditions are often undercoded and diagnostic codes inadequately convey information about the severity of patients' illnesses. Procedures may also be undercoded, particularly in the VA setting where reimbursement is not tied to coding and billing. Coding of clinical events is retrospective, and the timing of clinical events may not be reflected in administrative

data. Finally, coding may vary across VAMCs and VISNs, decreasing the comparability of these data.

Because patients were included in the National Depression Registry on the basis of a depression diagnosis, we did not include patients whose depression was not recognized by their physicians or patients who were recognized and treated with antidepressants but did not receive a formal depression diagnosis. . Data from primary care studies of depression in the VA indicate that between 30- 50% of depressed veterans had not spoken with their provider about depression, been referred for therapy, or treated with antidepressants in the last 6 months." (Chaney and Rubenstein, personal communication). Using diagnoses as inclusion criteria increases specificity, with fewer "false positive" patients, but also decreases sensitivity. We note that patients who receive depression diagnoses may also be treated by physicians who are more attuned to depression care and more likely to provide treatment that approximates guideline recommendations (Spettel et al. 2003).

Because of these limitations, the NARDEP report should be used primarily for descriptive purposes and to identify areas of care for depressed veterans that may need further examination. With the growing availability of electronic clinical information, the limitations of administrative data will decrease in the future, increasing its utility for quality management activities.

Key Registry Findings for FY 2002

- In FY02, the VHA provided care to nearly 305,122 veterans with a depression diagnosis in specialty mental health settings. An additional 204,272 patients with a depression diagnosis were seen only in primary care.
- The majority (54%) of veterans in the NARDEP had an additional psychiatric diagnosis in FY02; 40% had one comorbid psychiatric diagnosis and 20% had two or more comorbid diagnoses.
- PTSD and substance abuse were the most commonly diagnosed comorbid psychiatric conditions.
- 88% of depressed veterans had a comorbid medical condition, with the most common disorders being hypertension and arthritis

- 87% of NARDEP patients received an antidepressant prescription in FY02. Trazodone was the most widely used antidepressant, likely because of its hypnotic effects. Sertraline was the second most widely used antidepressant.

- 20% of all patients in the depression registry had some hospital-based utilization in FY02, with 10% of patients having a psychiatric admission and 12% having a non-psychiatric admission.

- The average number of outpatient mental health clinic stops per patient in FY02 was 13 (median of 4). The average number of non-mental health clinic stops in FY02 was 21 (median of 14).

- Approximately $3 billion was spent in FY02 on this population for medical and psychiatric care. Twenty-seven percent of these costs were for psychiatric care.

Chapter 2: Patient Characteristics—Psychiatric Comorbidity

Understanding the characteristics of the VHA patients with depression is critical to tailoring current services and planning future services. We report on psychiatric comorbidities among the 305,122 depressed veterans who received specialty treatment and describe the comorbidity categories that are used throughout the NARDEP 2002 report.

Psychiatric Comorbidity

Psychiatric comorbidity is defined as the presence, either simultaneously or in succession, of two or more specific psychiatric disorders in an individual within a specified period (Burke et al. 1990; Wittchen 1996).

Comorbidity has major implications for the course of patients' depressive disorders and their outcomes. Comorbid patients have higher service use than patients with only one psychiatric disorder, more severe symptoms, greater functional disability, and a longer illness course (Roy-Byrne et al. 2000; Bijl and Ravelli, 2000).

The Epidemiological Catchment Area Study (ECA) and the National Comorbidity Study (NCS), found that psychiatric comorbidity is common, with 54% and 56%, respectively, of respondents with a lifetime history of one DSM-III/DSM-III-R disorder also meeting criteria for another mental disorder (Kessler et al. 1994; 1991). Comorbidity among patients with depressive disorders is particularly common. In a large epidemiological study, 60.5% of patients with a depressive disorder had had another psychiatric disorder in the previous 12 months. 54.3% of these depressed patients had a comorbid anxiety disorder and 16.7% had a comorbid substance use disorder (De Graaf et al. 2002).

In analyses assessing the prevalence of six comorbidity categories (PTSD, substance abuse, other anxiety diagnoses, bipolar II, dementia, schizophrenia), we found that just 40% of veterans had a depression diagnosis alone. An additional 40% had a diagnosis in another comorbid category and 20% had a diagnosis in two or more comorbid categories.

Psychiatric Comorbidity Groups Used in the NARDEP Report

There were a variety of alternatives for constructing comorbidity groups for this report. After consultation with the Mental Health QUERI Executive committee, four comorbidity groups were selected for reporting purposes. These groups are based on treatment implications and the likely location of treatment within the VA mental health system.

The Comorbidity Groups used in the FY02 report are as follows:

Depression Alone or Depression with an Anxiety Disorder other than PTSD (N=158,768): This represents a patient population that may be considered "less complicated". These patients may require fewer treatment resources in mental health clinics and may be more likely to receive some of their treatment in primary care.

Depression and Substance Abuse (N=67,890): Patients in this category are likely to benefit from substance abuse services in addition to depression treatment. Although they may have other comorbidities in addition to substance abuse, substance abuse is often a pressing treatment issue. Substance abuse was one of the most common comorbidities among depressed veterans.

Depression and PTSD (N=57,720): Patients are included in this category if they had a PTSD diagnosis, without a concurrent substance abuse disorder. PTSD is a disorder of particular significance to the VA and it is highly comorbid with depression. These patients may require specialized PCT services in addition to depression treatment. PTSD was the most common comorbidity category among depressed veterans.

Other complicated Depression (N=20,744): Patients are included in this category if they have a comorbidity other than substance abuse or PTSD. Other comorbidities in this patient population included dementia, schizophrenia, and bipolar II.

Table 2.A: Comorbidity Groups Used in NARDEP 2002 Report

Comorbidity Groups				Total
Dep alone or w/OthAnx	Dep + SAbuse	Dep + PTSD	Other Comp Depression	
N	N	N	N	N
158,768 (52%)	67,890 (22%)	57,720 (19%)	20,744 (7%)	305,122

Table 2.B: Detailed Tables of Psychiatric Comorbidites, Using Six Comorbidity Groups (PTSD, Substance Abuse, Other anxiety diagnoses, Bipolar II, Dementia, Schizophrenia)

Nine Comorbidity Groups				
Group	**Frequency**	**Percent**	**Cumulative Frequency**	**Cumulative Percent**
Depression only	122,429	40.12	122,429	40.1
With PTSD	39,867	13.07	162,296	53.2
With Schizophrenia	7,057	2.31	169,353	55.5
With Bipolar2 Disorder	1,197	0.39	170,550	55.9
With Dementia	7,708	2.53	178,258	58.4
With Substance Abuse	30,789	10.09	209,047	68.5
With Substance Abuse and PTSD	14,153	4.64	223,200	73.2
With Other Anxiety Disorders	36,339	11.91	259,539	85.1
With 3 or more Other	45,583	14.94	305,122	100.00

Table 2.C: Number of Psychiatric Comorbidities Using Six Comorbidity Groups

Number of Psychiatric Comorbidity Groups				
Number of Comorbidities	**Frequency**	**Percent**	**Cumulative Frequency**	**Cumulative Percent**
0	122,429	40.1	12,2429	40.1
1	122,957	40.3	245,386	80.4
2	59,736	19.6	305,122	100.0

Table 2.D: Detailed View of Comorbidity Patterns

Patterns of Psychiatric Comorbidities Top 12 Most Frequent Comorbidity Patterns				
Comorbidity	**Frequency**	**Percent**	**Cumulative Frequency**	**Cumulative Percent**
PTSD	39,867	13.1	162,296	53.2
Anxiety	36,339	11.9	198,635	65.1
Substance Abuse	30,789	10.1	229,424	75.2
S. Abuse, PTSD	14,153	4.6	243,577	79.8
PTSD, Anxiety	12,343	4.1	255,920	83.9
S. Abuse, Anxiety	8,422	2.8	264,342	86.6
Dementia	7,708	2.5	272,050	89.2
Schizophrenia	7,057	2.3	279,107	91.5
S. Abuse, PTSD, Anxiety	4,700	1.5	283,807	93.0
S. Abuse, Schizo.	3,329	1.1	287,136	94.1
Dementia, Anxiety	2,121	0.7	289,257	94.8
PTSD, Dementia	1,848	0.6	291,105	95.4

Chapter 3: Patient Characteristics—Demographics

Age

An understanding of a population's age distribution is important in determining their likely service needs and the appropriate treatment interventions.

VA patients with depression constitute an older population, with an average age of 55.4 years. Twenty-three percent are 65 years of age or older. This suggests that services targeting depressed patients in the VA will need to be sensitive to the needs of seniors, including the demands of comorbid medical conditions, possible need for assistance in transportation, etc.

The psychiatric comorbidities that must be considered in the treatment of depression vary with age, with substance abuse being relatively more common in the 35 to 49 year range, PTSD comorbidities being concentrated among the Vietnam era veterans (50-64 years of age), and other complicated depression being relatively more common among the very old (≥80 years).

As the veteran population grows older in the coming years, depression complicated by dementia, is likely to become more salient.

Table 3.A: Veteran Age, by Comorbidity Group

					Overall (N=305,096)*
	Dep alone or w/OthAnx	Dep + SAbuse	Dep + PTSD	Complicated Dep	
< 35 years (n=16,890)	6.3%	4.74%	4.23%	5.31%	5.54%
35 - 49 years (n=82,660)	25.0%	41.35%	16.79%	24.67%	27.09%
50 - 64 years (n=134,757)	38.3%	47.09%	61.03%	32.82%	44.17%
65 - 79 years (n=58,854)	25.43%	6.33%	14.55%	27.86%	19.29%
>= 80 years (n=11,935)	4.85%	0.50%	3.39%	9.34%	3.91%
Total	100%	100%	100%	100%	100%

* n=26 patients had missing age

Gender

Gender is an important variable to consider in diagnostic and treatment processes, with the VA increasingly emphasizing the need to ensure access to treatment for women veterans. According to The Center for Women Veterans, in July of 2000, there were 1.2 million women veterans. Women veterans comprised 4.5% of the veteran population using VA health care services in 2002 (Roswell 2002). Because women constitute approximately 15 percent of the active duty forces, the percentage of VA users who are women is likely to increase(Roswell 2002).

Virtually all community-based studies of major depression find that the prevalence of depression is twice as high among women as it is among men (Kessler et al. 2003). Thus, if women have adequate access to depression treatment, they should have approximately twice the representation in the depression registry as they do in the general population of VA users.

In FY02, women comprised 9.6% of the patients in the Depression Registry (approximately twice the percentage of women VA users), suggesting that women veterans are receiving services in proportion to the expected prevalence of depressive disorders in this subpopulation. Women were less likely to have depression complicated by substance abuse than were men (OR =0.46).

Table 3.B: Veteran Gender, by Comorbidity Group

	Comorbidity Groups by Gender				Overall
	Dep alone or w/OthAnx	Dep& Sub Abuse	Dep & PTSD	Other Complicated Dep	
	N=158,768	N=67,890	N=57,720	N=20,744	N=305,122
Gender					
Female	11.5%	4.6%	9.9%	10.9%	9.6%
Male	88.5%	95.4%	90.1%	89.0%	90.4%
Total	100%	100%	100.00	100.00	100.00

Race/Ethnicity

The VHA is committed to ensuring appropriate treatment for all of its beneficiaries. Tracking patient treatment by ethnic/racial groups may assist in this goal. Disparities have been reported previously in the treatments offered to psychiatric and medical patients by ethnic group (Wells et al. 2001; Copeland et al. 2001; Kales et al. 2000).

In September 2001, African-Americans comprised 8.8%-10% of the total veteran population and 13.2% of all VA healthcare users were African-American. {Department of Veterans Affairs 2001 #9006}(Department of Veterans Affairs 2001).

Using structured diagnostic interviews, both the ECA and the NCS found a significantly lower life-time prevalence of affective disorders among African Americans than among Whites (Kessler et al. 1994; 1991; Kessler et al. 2003). The ECA reported that the life-time prevalence rate of depression in African-Americans was 4.5%; the NCS reported that the lifetime prevalence was 11.6%.

African-Americans comprise 13% of the depression registry, only slightly less than the proportion of African Americans using VA services, suggesting that they are accessing depression treatment in the VA in proportion to or at higher proportions than would be expected given the prevalence of depression among this subgroup. African Americans were more likely to be diagnosed with both depression and substance abuse than Whites (OR=1.95).

We note that approximately 20% of veterans do not have race or ethnic group specified in VA data.

Table 3.C: Veteran Race/Ethnicity, by Comorbidity Group

	Dep alone or w/OthAnx	Dep + SAbuse	Dep + PTSD	complicated Dep	Overall
	N=158,768	N=67,890	N=57,720	N=20,744	N=305,122
Hispanic	4.8%	4.9%	5.2%	8.9%	5.2%
American Indian	0.2%	0.7%	0.5%	0.2%	0.4%
Black	8.7%	23.9%	11.1%	13.9%	12.9%
Asian	0.3%	0.2%	0.5%	0.5%	0.3%
White	60.4%	57.4%	63.1%	61.3%	60.3%
Unknown	25.7%	12.8%	19.7%	15.1%	20.9%
Total	100.00	100.00	100.00	100.00	100.00

Marital Status

Marital status is an important indicator of social support. Several studies have reported that married individuals are less likely to develop depression than are single or divorced individuals (Kessler et al. 2003). The majority of VA patients with a depressive diagnoses were not married. Patients with both substance abuse and depression were the least likely to be married of the four comorbidity groups, with only 27% of these patients being married compared to 53% of patients with depression alone or with other anxiety disorders.

Table 3.D: Veteran Marital Status, by Comorbidity Group

	Dep alone or w/OthAnx	Dep + SAbuse	Dep + PTSD	Complicated Dep	Overall
	N=158,768	N=67,890	N=57,720	N=20,744	N=305,122
Divorced or Separated	25.8%	45.9%	25.3%	24.5%	30.1%
Married	53.0%	27.1%	59.3%	47.4%	48.0%
Never Married	15.3%	23.5%	11.8%	21.2%	16.9%
Widowed	5.9%	3.5%	3.6%	6.9%	4.9%
Total	100.00	100.00	100.00	100.00	100.00

VISN Analyses

Detailed demographics by VISN are reported below in the following pages.
Among all VISNs, VISN 3 has the oldest population of depressed veterans; VISN 17 has the largest percentage of depressed women veterans, and VISN 6 has the largest percentage of depressed African American veterans.

Section 3: Demographics by VISN

Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Visn23	All
15,261	8,357	11,389	13,786	7,424	13,955	17,387	28,388	14,096	12,800	12,166	11,393	14,167	27,988	13,648	13,329	8,791	15,508	13,814	17,217	14,258	305,122

	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Visn23
Age %																					
< 35	5.2	6	3.4	5.1	6.5	6.2	5.3	4.2	5	5.3	5.4	5	5	6.1	5.8	6.4	6.5	7.5	5.3	6.4	5.7
35 - 49	24.5	27.9	20	25.2	34.9	29.6	29.2	23.9	26.4	28.6	29	28	27.1	27.6	28.2	26.1	28.6	31	26	26.4	27.1
50 - 64	43.6	41	38.1	42.8	41.6	44.9	45.7	41.6	47.2	41.7	43.3	43.9	44	45.7	46.6	44.6	45.6	46.2	50	45	41.7
65 - 79	21.9	20.3	30.3	22.5	14.4	16.7	17.1	24.6	18.6	20.4	18.8	19.4	20.2	17.7	16.4	18.7	16.7	12.9	15.3	18.2	20.4
>= 80	4.9	4.7	8.3	4.5	2.6	2.7	2.7	5.6	2.9	4	3.6	3.7	3.8	2.8	3.1	4.2	2.5	2.4	3.5	4.1	5.2

		Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Visn23
Age	**Mean**	56.6	55.6	60.2	56.4	52.8	54.1	54.4	57.7	55.2	55.6	55.1	55.5	55.7	54.6	54.5	55.4	54.1	52.9	54.8	55.3	55.9
	Std.	13.4	13.8	14.1	13.4	12.5	12.4	12.2	13.5	12.3	13.2	12.9	13	12.9	12.6	12.4	13.3	12.6	12.2	12.3	13.3	13.6

	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Visn23	All
Gender %																						
female	7.9	9.6	5.4	7.8	11.5	11.4	10.6	10.1	7.9	8.3	8.3	7.6	8.6	10	12.6	11.6	11	12.1	10.2	9.4	9	9.6
male	92.1	90.4	94.6	92.2	88.5	88.6	89.4	89.9	92.1	91.7	91.7	92.4	91.4	90	87.4	88.4	89	87.9	89.8	90.6	91	90.4
Race %																						
Hispanic	1.9	1	7.8	1.1	1.5	1	0.8	23.1	0.4	1	0.8	2	1	1.5	15.2	11.5	6.2	1.6	5.1	7	0.6	5.2
Am. Indian	0.2	0.3	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.2	0.4	0.3	0.4	0.1	1.2	0.8	0.9	0.6	0.3	1.3	0.4
Black	4.7	8.8	16.4	13.9	36.6	20	27.9	6.4	10.7	12.5	14.7	21.3	9.4	19.7	13.3	3.9	4.2	5.9	10	11.7	4.1	12.9
Asian	0.1	0	0.3	0	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0	0.1	0.2	0.3	0.2	0.8	3.4	1	0	0.3
White	73.7	70.5	54.1	65.7	42.5	54.9	52.2	49	73.1	64.8	66.5	55.7	69.1	60.6	55.3	59.6	74.4	65.1	57.2	48	68.4	60.3
Unknown	19.4	19.4	21.4	19.2	19.1	23.7	18.9	21.3	15.6	21.5	17.7	20.3	20.2	17.7	15.9	23.5	14.2	25.7	23.8	32	25.4	21
Marital Status %																						
Divorce/Separated	29.4	27	22.5	25.7	32.9	27.7	28.8	26.3	29	32.9	34.2	33.1	30.6	28.6	29.7	30.8	32.3	35.9	34.4	34.4	31	30.1
Married	44.7	45.5	43.1	47.9	35.3	53.4	52.4	55.6	55.4	45.6	43.1	39.2	50.7	54.1	53.6	50.6	49.6	45.1	39.8	35.5	47.5	48
Never Married	19.7	21.6	26.4	20.8	25.9	14.9	14.1	12.9	11.4	15.6	17.3	22.2	13.7	13	12.6	13.7	14.4	15.2	21.8	25.1	16.5	16.9
Widowed	6.2	5.9	8	5.5	5.9	4	4.6	5.2	4.2	5.9	5.4	5.5	5	4.3	4.1	4.9	3.8	3.8	4	5	5	5
All	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Chapter 4: Other Patient Characteristics

Medical Comorbidity

Many depressed veterans are older and have comorbid medical conditions that further impact their functioning and well-being. The following table outlines the prevalence of common medical comorbidities, using diagnostic groupings derived from the Clinical Classification System.

The Clinical Classifications System was developed by the Agency for Healthcare Research and Quality (AHRQ), and groups patient with specific diagnoses and procedures into a manageable number of clinically meaningful categories.

We found that only 12% of depressed VA users did not have a medical co-morbidity. Approximately 45% of depressed veterans had a diagnosis of hypertension and 20% have a diabetes diagnosis. These rates of medical comorbidity are higher than is seen in the general VA user population. Using similar methodology, Wei et al (2003) found that 28% of the overall population of VA users had no chronic medical conditions, that 37% of the had hypertension and that 17% had diabetes (Wei et al. 2003).

Table 4.A: Medical Comorbidities (using Clinical Classification System)

						All
		Dep alone or w/OthAnx	Dep + SAbuse	Dep + PTSD	complicated Dep	
Entire Population		158,768	67,890	57,720	20,744	N=305,122
Percent with no comorbidities	%	54.87	22.34	16.92	5.87	11.80
Chronic Viral Infection	%	4.66	19.15	5.28	4.48	7.99
Cancer	%	9.85	6.17	8.79	10.35	8.86
Diabetes	%	21.61	13.36	22.60	23.82	20.11
Other Endocrine	%	7.66	4.53	7.52	9.27	7.05
Anemia	%	6.37	6.44	6.09	8.95	6.51
Chronic Neurological Disorders	%	14.77	14.53	15.95	19.76	15.28
Hypertension	%	46.88	39.13	46.94	49.44	45.34
Coronary Artery Disease	%	25.46	16.40	23.03	25.78	23.01
Cerebrovascular Disease	%	6.47	3.57	5.02	11.61	5.90

						All
		Dep alone or w/OthAnx	Dep + SAbuse	Dep + PTSD	complicated Dep	
Peripheral Vascular Disease	%	5.19	3.31	4.29	5.30	4.61
COPD	%	16.23	18.20	16.69	18.89	16.93
Diseases of the Digestive System	%	40.27	47.64	48.67	47.18	43.97
Liver Disease	%	2.52	7.50	2.80	2.65	3.69
Genitourinary Symptoms	%	25.29	20.07	25.56	29.67	24.48
Arthritis	%	46.34	48.37	53.38	43.79	47.95
Injury and Poisoning	%	16.52	24.92	20.15	19.73	19.29

Global Assessment of Functioning (GAF)

The Global Assessment of Functioning (GAF) was available for 37% (N=10,974) of depressed inpatients and 82% (N=247,706) of the depressed outpatients who were treated in FY02 (See Table 4C). The GAF is widely used in clinical practice and research settings. While reliance upon the GAF as the only tool to assess patients' functioning is problematic, numerous studies have documented the GAF's reliability and usefulness as an indicator of health status and treatment outcomes(Startup, Jackson, and Bendix 2002; Jones et al. 1995). The VHA Directive 97-059 requires mental health clinicians to complete a GAF score for outpatients every 90 days and a GAF score for inpatients at the time of discharge.

For patients in the depression registry, the mean lowest inpatient GAF score was 41, and the mean outpatient GAF score was 55, both indicating serious to moderate impairment in functioning**.** Among depressed outpatients, patients with both depression and substance abuse had the lowest GAF scores.

Mortality

Major depression and sub-threshold depressive symptoms have a significant impact on older individuals' ability to function and their quality of life (Ormel et al. 1998). Depression has also been strongly associated with other adverse outcomes such as increased medical morbidity and mortality (Penninx et al. 1998). According to the ECA, a large epidemiological study in the US, the odds of dying among individuals with MDD were >2.6 times those of individuals without MDD (Kouzis, Eaton, and Leaf 1995).

For the NARDEP, we used the mortality data available in the BIRLS and PTF data files, to calculate a Standardized Mortality Ratio (SMR) for depressed veterans. However, we found that these data likely under-report mortality. Using age-specific mortality in the

general US population, we calculated an overall Standardized Mortality Ratio (SMR) of 0.82 for depressed patients, suggesting that these depressed veterans have a lower mortality rate than the general US population. However, The SMR for a random sample (N=60,000) of all VA patients in FY01 was even lower (0.65), suggesting under-reporting of mortality is an issue in PTF and BIRLS data.

In logistic regression analyses, adjusting for age group, race, gender, and medical comorbidities using the Charlson Comorbidity Index, patients in the depression registry in FY01 were slightly more likely to die during FY02 than patients in the random sample of FY01 VA patients (OR=1.1, $p<0.01$). These findings are in line with previous studies suggesting higher mortality among depressed patients.

In the logistic analyses, mortality increased significantly with increasing age, and depressed patients with 1 or with 2 or more medical comorbidities during FY01 were significantly more likely to die during FY02 than were patients with no medical comorbidities (OR=1.9 and 4.4 respectively, $p<.0001$).

Service Connection

Veterans are considered to have a service-connected disability if they have a disorder or injury that was incurred or aggravated by their service in the armed forces. Both health care benefits and compensation payments are tied to the degree of service-connected disability. We determined depressed veteran's degree of service connection using the VA's PTF, OPC, and C&P Mini-master file. (See Table 4C.) Approximately 20% of veterans in the depression registry have a SC disability of 70% or greater. Among patients who have a SC disability, approximately 60% have some of their disability status as a result of a psychiatric condition.

Table 4.B: Service Connection for Depression or a Psychiatric Diagnosis, (N=126,491 patients that are service connected)
(Service connection was determined using the C&P Mini-master file only, Missing = 178,631)

	Dep alone or w/OthAnx	Dep + SAbuse	Dep + PTSD	Complicated Dep	Overall
	56,120	21,648	40,375	8,348	N=126,491
% SC for Depression	15.4%	8.4%	6.1%	9.9%	10.9%
% SC for any psych	40.9%	64.8%	80.3%	64.5%	59.1%

VERA Patient Class

The VERA 2003 model used in this report includes ten new patient price groups designed to allocate funding to the VISNs. The VERA Patient Classification system provides the criteria for placing each patient into one of 47 different classes, and these classes are then aggregated into the 10 price groups. Patient workload is funded at the VISN level based on the 10 VERA prices groups and pro-rated person (PRP) methodology. More information on the VERA patient price groups is available at vaww.arc.med.va.gov, and the 10 Price Groups are presented in Appendix B.

The distribution of depressed patients in the 10 VERA price groups is shown in Table 4C. As can be seen in the table, the largest percentages of depressed patients fall into VERA 3, mental health or VERA 6, multiple medical.

Homelessness

In studies of individuals who are homeless, up to one-third have been found to be affected by mental illness (Bassuk et al. 1998; 1992). Homeless individuals suffer from a high rate of battery, rape, mental distress, and depression. (Caracci and Mezzich 2001). The mentally ill fare even worse than other homeless individuals in terms of physical health, subsistence needs, victimization, and subjective quality-of-life (Sullivan et al. 2000).

We report the percentage of patients whose administrative data indicate they are homeless. In the outpatient sector, homelessness was defined by documentation in patient's chart of any of the following clinic stops (501-HMI outreach, 515-CWT/TR for homeless chronically mentally ill, 528-Phone/HMI, 529-HCHV/HMI, 590-community Outreach Homeless-staff). In the inpatient sector, homelessness was defined as patient's use of the following bed sections (28-HCMI CWT/TR or 37-DHCV-Dom. Care for homeless) or ICD-9 code V60.0.

As noted in Table 4C, administrative data indicated that approximately 9% of depressed veterans are homeless. This is likely an undercount, given that many homeless individuals do not receive homeless outreach services or stay in residential or domiciliary programs. Thus, the homelessness appears to be a substantial problem among depressed veterans, particularly those with accompanying substance abuse disorders.

Accessibility

Access to medical care is a complex issue that can be measured along multiple dimensions, including affordability, availability, and geographic accessibility (Penchansky and Thomas 1981). Since the issues of cost and insurance are less pertinent for our population, we report on access in terms of geographic accessibility, operationalized in terms of miles to VA providers. Distance in miles has been fairly consistently found to have a negative effect on health services utilization (Horner et al. 1994). For mental health services, the

impact of distance is even greater (Fortney et al. 1995). A meta-analysis identified the same relationship between distance and use with mental health services as with medical services, in both private and community health systems (Shannon, Bashshur, and Lovett 1986). Patients living farthest from hospitals had significantly longer lengths of stay, greater costs and worse outcomes. Among active VA patients with psychoses, greater distance is associated with decreased volume and continuity of care (McCarthy 2002). Patients traveling long distances for care may also be dislocated from important social support systems.

The VA has conducted numerous studies examining issues of access due to distance. Zip code areas have been used in studies of both medical and mental health services (Fortney, Owen, and Clothier 1999). Distance was one of the primary reasons that veterans did not obtain needed care. Patients living father away from primary mental health services were 4.8 times as likely to have acute psychiatric admissions (Fortney, Owen, and Clothier 1999).

For the purposes of this report, access was defined as the distance from a patient's residence to their nearest VA Medical Center (excluding contract care facilities) and to their nearest Service Center. Ninety-eight percent of the nearest Service Centers were CBOCs or VAMCs (domiciliary, nursing home and contract care providers were excluded from this category). Distances are based on straight-line estimates of the geographic placement of patients' postal zip code to the zip code of the closest VA provider.

Data from the VA Planning Systems Support Group (PSSG) were used to ascertain the zip codes of the VA facilities and the patient's zip codes were retrieved from the PTF and OPC files.

In addition, we assessed the percentage of patients living in a Metropolitan Statistical Area (MSA). An area qualifies for recognition as an MSA in one of two ways: the presence of a city of at least 50,000 population or an urbanized area of at least 50,000 with a total metropolitan population of at least 100,000 (75,000 in New England).

Table 4.C: Other Patient Characteristics

		Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
Lowest inpatient GAF score	Mean	42	41	38	35	41
	Std	15	13	14	14	14
Mean Outpatient GAF score	Mean	58.1	50.9	51.9	52.1	54.8
	Std	10	10.4	9.3	10.9	10.6
At least 1 inpatient GAF		24.6%	41.5%	29.3%	35.0%	37.4%
At least 1 outpatient GAF		78.2%	84.7%	86.5%	83.2%	81.6%
Died in FY02		1.5%	1.2%	1.0%	2.3%	1.4%
Service Connection (SC)						
Non-SC		60.6%	63.0%	24.7%	53.9%	53.9%
SC 0 - 29%		11.8%	10.1%	8.7%	10.0%	10.7%
SC 30 - 69%		15.2%	11.9%	23.6%	13.4%	15.9%
SC 70 - 99%		7.1%	7.3%	23.5%	7.3%	10.3%
SC 100%		5.3%	7.7%	19.5%	15.4%	9.2%
Total		100%	100%	100%	100%	100%
VERA GROUPS						
VERA 1: Non-reliant Care	%	0.4	0.1	0.2	0.1	0.3
VERA 2: Basic Medical	%	22.5	9.1	13.3	16.4	17.4
VERA 3: Mental Health	%	44.5	26.9	44.4	41.4	40.4
VERA 4: Heart/Lung/GI	%	10.6	5.1	6.4	7.3	8.4
VERA 5: Oncology/Inf Dis	%	3	8.3	2.9	2.4	4.1
VERA 6: Multiple Medical	%	14.7	35.1	26.4	20.3	21.8
VERA 7: Specialized Care	%	1.7	4.5	3.5	2.2	2.7
VERA 8: Support Care	%	1.6	4.5	1.4	2.8	2.3
VERA 9: Chronic Mental	%	0.4	5.7	1.1	5.4	2
VERA 10: Critically Ill	%	0.7	0.7	0.5	1.6	0.7
Total	%	100	100	100	100	100

Homeless in FY02		2.7%	29.0%	3.0%	4.9%	8.8%
Reside in MSA		74.7%	80.9%	72.0%	79.1%	75.9%
Miles to closest VAMC	**Mean**	39.9	30.4	42.7	30.2	37.7
	Std	87.6	74.4	91.6	51.5	83.8
Miles to closest VA service	**Mean**	12.9	10	13.6	11.2	12.2
	Std	13.7	13.3	15.8	11.9	14

Key Findings

- Average lowest inpatient GAF score was 41, with a mean outpatient score of 55, both indicating moderate to severe impairment in global functioning.
- 40% of registry patients were categorized as VERA 3 (Mental Health), and 22% were categorized as VERA 6 (Multiple Medical).
- 54% of the registry population was not service connected, 11% were 0-29% connected, 16% were 30-69% connected, 10% were 70-99% connected, and 9% were 100% service connected.
- Using distance from care as a proxy, patients lived, on average, 38 miles from the nearest VA medical center and 12 miles from any VA service site.
- Approximately 9% of depressed veterans treated in specialty care had administrative data indicating homelessness. This is likely an underestimate.
- Medical comorbidity is very common among veterans with depression, with 88% having at least one significant comorbidity.

Section 4: Patient Characteristics byVISN

		VISN																					
		V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V15	V16	V17	V18	V19	V20	V21	V22	V23	All
Lowest inpatient GAF score	Mean	35	44	43	45	40	42	42	40	40	44	44	41	48	37	45	44	40	32	40	38	42	41
	Std	13	9	11	10	12	12	13	14	12	10	14	12	14	16	12	13	13	18	17	14	13	14
Mean Outpatient GAF score	Mean	52	53.8	56.3	55.7	53.2	55	54.5	56.4	54.5	56.4	57.6	54.1	56.4	55	53.3	55.2	51.1	51.7	54.8	52.3	57.3	54.8
	Std	10.4	9	9.4	10.3	10.2	10.3	9.5	10	10.4	11.3	10.3	11.3	10.9	10.2	9.8	11.4	10.4	10.7	10	13.1	10.2	10.6
At least 1 IP GAF	%	38.7	64.5	42.4	36.9	54.2	25.9	33.3	28	31.3	46	30.2	58.8	17.3	52.5	40.3	24.3	30.7	45.8	22.2	22.6	44.8	37.4
At least 1 outpatient GAF	%	85.9	90.2	83.7	77.9	67.8	85.3	89.6	76.5	81	79.4	84.9	83.4	83.5	96.7	81.5	83.9	81.3	68.4	82.6	61.5	79.5	81.6
Died in FY02	%	1.4	1.2	1.2	1.6	1.1	1.5	1.2	1.7	1.9	1.4	1.4	1.4	1.8	1.4	1.3	1.6	1.3	1.2	0.8	1.3	1.8	1.4
Service connected (SC), %																							
Non-SC	%	50.4	58.4	59.8	57.5	58.7	45.7	50.9	52.7	52.8	65.6	62.8	61.3	59.5	50.8	45.4	50.2	49.6	45.4	52.8	59.1	53.7	53.9
SC 0 - 29%	%	9.7	10.8	11.2	10.3	10.2	10.8	11.4	12	10.5	11.3	11.1	10.1	10.2	10.8	10.7	10.3	10.2	10.8	9.6	10.5	10.6	10.7
SC 30 - 69%	%	15.3	14.4	14	15.5	14.6	20.1	18.3	16.5	17	13.5	14.4	13	14.7	17.4	18.8	15.4	17.1	17.6	14.6	12.9	15.4	15.9
SC 70 - 99%	%	13.3	8.7	7.8	9	7.7	12.9	10.1	9.3	9.2	5	6.3	8	7.8	11.5	14.3	13.1	11.7	15.2	12.8	8.2	10.4	10.3
SC 100%	%	11.2	7.7	7.1	7.6	8.9	10.6	9.2	9.5	10.5	4.6	5.4	7.6	7.8	9.6	10.8	11	11.4	11.1	10.1	9.2	9.9	9.2
Total	%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
SC for depression	%	9.6	8.6	9	12.2	12.4	11.3	9.1	12	10.3	8.4	9.2	10.5	8.9	12.5	11.4	10.6	11.8	12.3	9.5	10.8	12.9	10.9
SC for any psychosis	%	65.5	61.4	66.7	62.7	57.7	57.6	55.3	56.3	56.1	51.4	52.4	59.4	58	58.4	62	56.5	59.3	61.6	64	59	61	59.1
VERA Groups, %																							
VERA 1	%	0.3	0.5	0.2	0.5	0.6	0.4	0.1	0.2	0.1	0.1	0.1	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.4	0.1	0.2	0.3
VERA 2	%	13.5	15.4	15	16.2	15.7	19.4	19.1	17.4	20.8	14.5	17.7	14.7	19.4	20.3	18.6	18.8	17.9	14.2	14.7	16.9	19.1	17.4
VERA 3	%	43.7	44.6	40.6	43.2	32.6	39.5	41.5	38.2	39.1	44.2	42.7	36.6	39.8	41.1	37.8	39.4	42.2	41.2	42	39.4	38.6	40.4
VERA 4	%	6.4	7.5	7.9	8.7	8.5	10.1	8.5	8.9	9.8	8.3	8.7	7.3	10.4	9.3	7.5	9.5	7.5	6.7	6.9	6.8	8.8	8.4
VERA 5	%	3.6	3.6	5.2	4.3	5.5	3.9	4.1	3.8	3.3	3.5	4.4	3.9	3.6	4.5	3.4	4.2	3.7	4.4	5.9	4.6	3.2	4.1
VERA 6	%	23.4	18.9	20.6	19.5	25.2	20	20	25	20.6	21	20.2	25.5	19	18.9	23.7	21.9	21.8	25.3	22.2	24.7	20.7	21.8
VERA 7	%	3.7	3	4.1	2.6	3.5	2.5	2.8	2.6	1.7	2.8	2.5	3.6	2.6	2	2	2.1	2.7	2.9	3.5	2.7	2.9	2.7
VERA 8	%	2.1	2.6	2.4	2.2	4.1	1.8	1.7	2.3	2.1	2.6	1.5	3.6	2.4	1.8	3.4	2.2	1.1	2.4	1.9	2.1	3	2.3
VERA 9	%	2.7	3.3	3.2	2.1	3.7	1.8	1.7	0.9	1.7	2.3	1.3	3.9	1.9	1.5	2.5	1.1	2.3	2.1	1.7	1.9	2.4	2
VERA 10	%	0.6	0.7	0.8	0.8	0.5	0.7	0.5	0.7	0.7	0.9	0.7	0.7	0.7	0.5	0.8	0.7	0.5	0.6	0.9	0.7	1.2	0.7
Total	%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Number of patients	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vi 23
	15,261	8,357	11,389	13,786	7,424	13,955	17,387	28,388	14,096	12,800	12,166	11,393	14,167	27,988	13,648	13,329	8,791	15,508	13,814	17,217	14,258

Section 4, cont.		VISN																					All
		V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V15	V16	V17	V18	V19	V20	V21	V22	V23	
Homeless in FY02	%	9.4	8.3	13.2	7.9	17.4	6	7.5	5.4	4.8	10.8	10.2	11.7	6.6	7	10	7.5	7.4	12.2	10.9	12.1	7.1	8.8
Reside in MSA	%	77.4	76.3	98.8	79.9	87.4	63.7	68.7	86.5	59.4	77.4	75.4	79.4	55.8	69.5	79.4	74.6	72.9	72.7	86.4	99.4	54.3	75.9
Miles to closest VAMC	Mean	22	26.4	11	20	15.8	28.4	38.4	39.3	38.3	28.8	34.1	24.6	32.9	44.6	45.6	52.9	49.3	108.7	35.7	19.5	45.4	37.7
	Std	22.4	25.9	10.7	17.5	19.1	22.7	29	33.8	30.8	20.2	29.5	27.1	31.8	36.8	54.9	67.9	52.6	327.4	45.3	25.2	45.2	83.8
Miles to closest VA service	Mean	8.8	8.2	4.3	9.1	7.7	17.2	17	9.6	16.3	9.2	13.5	9.4	13.8	18.4	11.3	11.1	13.2	15.2	9.4	6.5	18.7	12.2
	Std	8.6	7.5	4.1	7.8	7.2	13.5	14.8	8.9	13	8.3	12	10	13.1	15.8	10.8	13.3	17.7	28.9	10.8	7.2	18.7	14

Chapter 5: Pharmacy Utilization

Background

Antidepressant medications are an important component of depression treatment. Recent meta-analyses of studies comparing patients receiving newer antidepressants to patients receiving placebo found a 20% differential in improvement rates (Snow, Lascher, and Mottur-Pilson 2000; Williams et al. 2000).

However, depressed patients may not receive antidepressants or continue on them for sufficient periods of time. Haphazard use of antidepressant may incur costs without commensurate patient benefits. In 2000, the cost of psychotropic medications was estimated to be in the range of 16-25% of total pharmacy costs (Schreter, 2000). However, studies suggest that 30% to 70% of depressed patients discontinue their antidepressant treatment prematurely (Hylan et al. 1999; Melfi et al. 1998).

In this report, we examine the use of antidepressants and other psychotropic medication classes among depressed veterans. Appendix C lists the medications included in each psychotropic class.

Antidepressant Use

A large majority (92%) of depressed patients treated in specialty care received a psychotropic agent in FY02. Most (87%) received an antidepressant. The mean number of antidepressant prescription fills was 8.6 and the median number of fills was 7.0, suggesting that in this prevalent sample, many patients were using antidepressants for long periods of time. (86% of fills were for a thirty day supply.)

Using performance measures developed with the VA Office of Quality and Performance, we also examined the adequacy of antidepressant coverage for patients with new episodes of depression, treated with an antidepressant. Patients were considered to have a new episode of depression if they did not have a depression diagnosis in the previous 120 days before the index diagnosis, nor antidepressant fills 90 days before their index antidepressant start. We identified 20,575 VA patients with new episodes of depression in FY02 in primary care and specialty settings. Approximately 64% of these patients received adequate antidepressant coverage during the acute treatment phase, defined as having antidepressants on hand for $\geq$12 of the 16 weeks following the antidepressant start. This compares favorably with many managed care organizations **(**Quality Compass, 2002).

The switch to newer antidepressants appeared to be almost complete by FY02, with few depressed veterans receiving tricyclic antidepressants or monamine oxidase inhibitors. In FY02, amitriptyline, doxepin, and nortriptyline were the most commonly prescribed tricyclic antidepressants, but only 7%, 2.5%, and 2.4% of depressed specialty patients were prescribed these medications, respectively. Trazodone was the most commonly

prescribed newer antidepressant, likely because of its hypnotic effect. Sertraline was the next most commonly prescribed; 26% of depressed veterans received a prescription for trazodone and 23% received a prescription for sertraline in FY02. The next most commonly prescribed antidepressants were citalopram, bupropion, fluoxetine, and paroxetine.

Use of Adjunctive Medications

The use of adjunctive medications was common among depressed veterans. Only 33% of veterans used medications from just one psychotropic class during the year. Eight percent of depressed veterans received medications from 4 or more psychotropic classes during FY02 and eight percent received no psychotropic medication during FY02. Use of multiple psychotropic classes was strongly associated with psychiatric comorbidity.

Table 5.A: Number of Psychotropic Classes Received, by Diagnosis Grouping

Number of Classes	**Depression alone/ONLY with OthAnx (N=158,768)**	**Depression + any Sabuse (N=67,890)**	**Depression + any PTSD (N=57,720)**	**Other Complicated Dep (N=20,744)**	**Overall**
0	9.0%	9.5%	4.7%	4.8%	8.0%
1	38.9%	30.4%	25.9%	20.5%	33.3%
2	33.4%	29.7%	34.2%	33.4%	32.7%
3	14.2%	18.7%	22.5%	26.2%	17.6%
>=4	4.5%	11.6%	12.6%	15.2%	8.4%

In addition to examining use of the various psychotropic classes during the year, we examined concurrent use of different classes. Concurrent use was defined as at least a 60 day overlap in days covered by prescription fills. We found that 15.5% of depressed

patients had concurrent prescriptions for an antidepressant and a mood stabilizer, 15.3% had concurrent prescriptions for an antidepressant and an antipsychotic, and 25.9% had concurrent prescriptions for an antidepressant and a benzodiazepine.

Benzodiazepine Use

Benzodiazepine use was particularly common among depressed veterans, with 32% of depressed veterans filling at least one prescription for these medications in FY02. Contrary to depression treatment guidelines, most of the treatment with benzodiazepines appears to be long term. Registry data from FY01 indicated that 78% of depressed benzodiazepine users continued on these medications for $\geq$ 90 days and 61% continued for $\geq$ 180 days (Valenstein et al, in press).

Antipsychotic and Mood Stabilizer Use

Depressed patients commonly received both antipsychotics and mood stabilizers, despite the exclusion of patients with Bipolar I Disorder. Approximately 19% of all depressed patients received an antipsychotic. The use of antipsychotics was not limited to patients with depression accompanied by schizophrenia or dementia, which comprised 2% and 3% of depression registry patients, respectively. Ten percent of patients with diagnoses of depression alone and 25% of patients with comorbid depression and PTSD were treated with antipsychotics. Currently there are few data supporting the use of antipsychotics for patients with depression or PTSD, unaccompanied by psychotic symptoms. Only one small randomized controlled trial (RCT) supports the efficacy of atypical antipsychotics in refractory major depression, and only one RCT supports use of antipsychotics among patients with PTSD (Stein, 2002). However, antipsychotic use appears to be a common treatment strategy for depressed patients.

Approximately 19% of depressed patients received a mood stabilizer during the year, despite exclusion of patients with bipolar disorder. Lithium has long been known to be a useful adjunctive treatment, when depressed patients have only a partial response to antidepressants. However, the most commonly used mood stabilizers among depressed veterans in FY02 were gabapentin and valproate, used by 65% and 28%, respectively, of depressed patients using a mood stabilizer.

Pharmacotherapy of Patients with Comorbid Conditions

There was a significant influence of comorbidity on all combination pharmacological treatment, with comorbid patients being much more likely to receive multiple psychotropic agents.

Table 5.D gives a detailed view of psychotropic use across comorbidity groups.

Table 5.B: Use of Psychotropic Classes, by Diagnosis Grouping

	Dep alone or w/OthAnx	Dep + SAbuse	Dep + PTSD	Other complicated Dep	Overall
	158,768	67,890	57,720	20,744	N=305,122
Psychotropic use in FY02	91.0%	90.5%	95.3%	95.2%	92.0%
Antidepressants	86.6 %	84.8 %	91.3 %	83.0 %	86.9 %
Alcohol Treatment	0.1 %	4.4 %	0.15 %	0.1 %	1.1 %
Antihistamine/ Antiparkinson	11.8 %	22.7 %	16.8 %	20.3 %	15.7 %
Benzodiazepines	31.3 %	25.9 %	41.4 %	34.6 %	32.2 %
Other Antianxiety	8.8 %	10.7 %	14.1 %	8.8 %	10.2 %
Mood Stabilizers	16.2 %	21.5 %	24.1 %	22.6 %	19.3 %
Antipsychotics	9.8 %	25.0 %	24.9 %	46.5 %	18.5 %
Stimulants	1.4%	0.7 %	1.3 %	1.3 %	1.2 %
Anticolinesterases	1.4 %	0.5 %	1.4 %	13.2 %	2.0 %
Use of >=4 Psychotropic Classes, %	4.5%	11.6%	12.6%	15.2%	8.4%

Table 5.C: Use of Antidepressants, by Diagnosis Grouping

	Dep alone or w/OthAnx (%)	Dep + SAbuse (%)	Dep + PTSD (%)	complicated Dep (%)	Overall (%)
	158,768	67,890	57,720	20,744	N=305,122
Amitriptyline	7.2%	6.4%	7.0%	5.6%	6.9%
Desipramine	0.6%	0.5%	0.6%	0.5%	0.5%
Doxepin	2.1%	3.0%	3.0%	2.2%	2.5%
Imipramine	0.7%	0.5%	0.8%	0.7%	0.7%
Clomipramine	0.2%	0.2%	0.2%	0.3%	0.2%
Nortriptyline	2.5%	1.8%	2.8%	2.5%	2.4%
Phenelzine	0.1%	0.04%	0.1%	0.1%	0.1%
Tranylcypromine	0.04%	0.03%	0.03%	0.02%	0.03%
Bupropion	15.6%	16.1%	18.2%	12.7%	16.0%
Citalopram	20.5^	21.2%	22.7%	19.1%	21.0%
Fluoxetine	14.2%	13.0%	14.4%	13.0%	13.9%
Nefazodone	4.2%	6.2%	9.2%	3.6%	5.6%
Paroxetine	13.3%	13.7%	13.4%	12.7%	13.4%
Sertraline	22.7%	22.0%	25.3%	23.5%	23.1%
Trazodone	20.5%	34.6%	31.0%	21.0%	25.6%
Venlafaxine	8.4%	8.6%	10.3%	8.4%	8.8%
Mirtazapine	7.6%	11.2%	10.7%	7.5%	9.0%

Table 5.D: Use of Psychotropic Medications in FY02, by Detailed Diagnosis Grouping

	Depression only (%)	Depression + PTSD (%)	Depression + Schiz (%)	Depression + Bipolar2 (%)	Depression + Dementia (%)	Depression + SubAbuse (%)	Dep + SAbuse + PTSD (%)	Depression + Other Anxiety (%)	Other, three or more (%)	Overall (%)
Detailed Patient Groups N (%)	122429 (40%)	39867 (13%)	7057 (2%)	1197 (0.4%)	7708 (3%)	30789 (10%)	14153 (5%)	36339 (12%)	45583 (15%)	305122 (100%)
OVERALL PSYCHOTROPIC USE, %										
Use of any Psychotropic,	89.60	94.38	95.71	95.49	93.73	84.70	94.27	95.63	96.53	91.97
Use of >=4 Psychotropics	3.55	10.22	18.24	11.61	9.42	4.36	13.45	7.80	19.36	8.35
USE OF PSYCHOTROPIC CLASSES, %										
Alcohol Treament	0.09	0.13	0.13	0.25	0.04	4.26	4.63	0.07	2.33	1.06
Antihistamine/parkins.	10.93	15.45	28.69	13.95	12.69	17.35	22.81	14.51	25.02	15.72
Benzodiazepine	24.14	35.89	33.73	27.90	25.29	16.43	26.55	55.43	45.83	32.24
Other Antianxiety	6.91	12.92	7.47	7.35	6.97	6.05	13.22	14.99	15.74	10.20
Mood Stabilizers	16.03	23.06	23.24	48.45	17.01	15.00	25.13	16.77	26.98	19.31
Antidepressants	85.62	91.07	74.76	86.72	87.22	79.13	90.89	89.97	89.92	86.88
Antipsychotics	9.31	21.67	76.41	24.23	23.94	12.10	29.41	11.28	37.11	18.51
Stimulants	1.41	1.24	0.79	2.67	1.45	0.56	0.69	1.28	1.17	1.21
Anticolinesterases	1.43	0.85	1.13	1.25	27.52	0.32	0.16	1.11	2.64	1.98
USE OF ANTIDEPRESSANTS, %										
Amitriptyline	7.11	6.87	4.73	6.27	5.83	5.87	6.49	7.27	7.07	6.85
Desipramine	0.54	0.55	0.61	0.50	0.39	0.43	0.43	0.57	0.60	0.54
Doxepin	1.91	3.04	2.69	1.67	1.61	2.20	3.94	2.83	3.13	2.48
Imipramine	0.61	0.67	0.62	0.67	0.56	0.29	0.47	0.90	0.92	0.66
Clomipramine	0.13	0.14	0.33	0.25	0.18	0.08	0.16	0.31	0.30	0.18
Nortriptyline	2.45	2.69	2.17	2.26	2.58	1.46	1.91	2.79	2.61	2.42
Phenelzine	0.08	0.05	0.04	0.25	0.03	0.03	0.06	0.13	0.08	0.08
Tranylcypromine	0.04	0.03	0.01	0.08	0.03	0.03	0.01	0.03	0.03	0.03
Bupropion	15.87	18.51	10.50	22.47	13.08	15.24	18.17	14.48	16.23	15.98
Citalopram	19.85	22.09	13.76	21.47	21.78	19.58	22.29	22.80	23.14	20.99
Fluoxetine	14.50	14.64	13.05	16.54	12.29	12.45	13.74	13.14	13.51	13.88
Nefazadone	3.92	9.15	3.09	5.26	2.91	4.12	9.31	5.23	7.74	5.56
Paroxetine	11.76	12.08	10.80	11.53	12.14	10.83	13.23	18.54	17.03	13.36
Sertraline	22.58	25.18	19.75	17.13	27.66	19.30	25.92	23.06	24.22	23.09
Trazodone	19.83	31.16	20.22	22.31	19.62	28.62	42.34	22.56	33.56	25.63
Venlafaxine	8.02	9.98	6.86	11.86	7.58	6.53	9.15	9.85	11.01	8.82
Mirtazapine	7.06	10.42	5.04	8.94	8.10	8.69	13.58	9.45	12.01	8.98

Number of patients	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vi 23
	15,261	8,357	11,389	13,786	7,424	13,955	17,387	28,388	14,096	12,800	12,166	11,393	14,167	27,988	13,648	13,329	8,791	15,508	13,814	17,217	14,258

Section 5: Medication Use, by VISN

	% Use by VISN																					All
	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Visn23	
>=4 Psychotropics	8.2	8.9	8.8	7.6	7.6	8.6	11.4	8.4	10.2	7.2	6.5	7.9	9.3	9.7	8.5	6.6	8.7	7.9	7.4	7	6.5	8.4
Psychotropics	90	87.5	89.4	90.8	84.9	94.1	95	94.1	96	92	90.9	88.1	94.6	94.3	94.1	91	91.1	92.1	88.2	90.1	91.3	92
Antidepressant	83	81.1	82.6	85.7	79.1	88.5	90.1	89	92	86.8	85.7	82	90.7	90.3	90.9	85.6	86.8	88.2	81.6	83.7	86.8	86.8
Antipsychotic	21.3	18.2	20.4	19.4	18.8	18.5	24.7	18.4	18.6	15.6	15.9	17.2	21.1	20.5	19.7	13	21	14	18.1	17.2	14.5	18.5
Benzodiazepines	30.9	28.1	25.2	31	22.5	39.4	40.6	41.7	38.1	30.1	34.8	28.9	35.2	27.8	32.1	38.6	30	22.9	27.4	32.2	25	32.2
Other Antianxiety	12.4	19.5	19.7	7.2	13.1	8.7	7.1	7.1	11.1	7.6	5.7	15.4	8.6	13	10.2	6.2	7.3	13.3	9.3	6.8	12.2	10.2
Mood Stabilizers	20.4	18.4	17.3	19.4	16.2	19.4	24.4	20.5	22.1	18	15.6	19.4	20.9	19.4	18.2	16.2	18.4	17.7	20	18.9	19	19.3
Stimulants	1.6	1.1	1.2	0.8	1.5	0.9	1.2	0.6	0.5	1	1.2	1.8	1.2	0.6	1	1.7	2.8	1.9	1.2	1.4	2.1	1.2
Anticolinesterase	1.5	1.7	2.8	2	1.2	1.7	1.9	3.2	2.1	1.9	1.3	1.4	2.4	2.6	2.2	1.6	1.2	1.2	0.9	2.1	2	2
Antihistamine/Antiparkinson	8.7	11.8	13.3	13.5	12.2	16.8	19.2	16.2	22.8	18.5	14.7	10.9	16	22.5	18	14.8	12	17.6	14.4	13.5	9.8	15.7
Alcohol Treatment	2.4	0.5	0.5	0.7	1.3	0.8	1	0.5	0.8	0.7	1	1.3	0.8	0.6	1.2	0.7	2.2	2.6	1.4	0.5	1.7	1.1
Amitriptyline	5.1	5.1	4.1	6.6	6.4	7.7	7.4	5.8	9.2	8.8	5.8	5.7	7.8	8.4	7.8	7.5	7.2	6.4	6.8	6.6	5.9	6.8
Desipramine	0.6	0.6	0.3	0.5	0.4	0.3	0.4	0.4	1	0.9	0.2	0.5	0.3	0.3	0.4	1	1.1	0.8	0.4	0.7	0.6	0.5
Doxepin	1.7	1.4	1.1	2.5	2.2	2.1	2.3	2.8	3.4	2.2	3	2.2	3.1	3.6	2.1	3	2.1	2.6	1.8	2.3	2.3	2.5
Imipramine	0.9	0.6	0.3	0.8	0.5	0.6	0.6	0.6	1	0.6	0.8	0.7	0.8	0.6	0.7	0.5	0.6	0.8	0.5	0.7	0.8	0.7
Clomipramine	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.3	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.3	0.2
Nortriptyline	2.3	2.2	2.2	2.3	2.1	2.6	2.5	2.4	2.6	2.3	2.6	2.3	2	2.5	1.9	3.3	3	3.3	2	2	2.4	2.4
Phenelzine	0.1	0.04	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.03	0.04	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tranylcypromine	0.1	0	0.01	0.1	0.1	0	0.04	0.01	0.1	0.02	0.02	0.04	0.01	0.01	0.04	0.01	0.03	0.04	0.04	0.1	0.1	0.03
Bupropion	17.3	16.6	13.1	13.9	16.7	13.9	15.5	13.2	16.8	12.7	13.4	15	16.6	16.7	18.5	18.5	16.1	20	16.2	18.7	16.7	16

Section 5: Medication Use by VISN, continued

Number of patients	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vi 23
	15,261	8,357	11,389	13,786	7,424	13,955	17,387	28,388	14,096	12,800	12,166	11,393	14,167	27,988	13,648	13,329	8,791	15,508	13,814	17,217	14,258

	% Use by Visn																					
	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Visn23	All
Citalopram	20.5	17.8	15	21.1	14.3	22	18.4	22.4	22.3	22.1	14.8	17.6	28.9	23.1	23.2	24	20.7	27.8	16	17.9	20.8	21
Fluoxetine	14.1	11.7	13.1	13.8	10.8	12.8	15.2	16.1	13.1	12.5	14.9	11.7	11.7	16	13.5	13.8	18.3	11.5	13.4	15.2	12.3	13.9
Nefazadone	6	5	4.2	5.5	4.1	5.5	5.3	5.5	4.5	3.8	5.4	5.9	7.5	6	6.2	4.6	5.3	6.8	7.3	5.3	5.2	5.6
Paroxetine	10.8	14.1	16.8	12.9	13	12.9	14.4	15.7	14.8	13.5	14.4	12.5	14.2	11.8	11.9	9.6	13.1	13.5	13.3	14.2	12.7	13.4
Sertraline	19.6	24.1	25.2	25.3	24.2	25.6	28.2	22.2	27.8	23.3	24.8	19.9	23.7	26	26.3	20.6	21.2	17.9	17.3	18	22.5	23.1
Trazodone	21.9	16	20.6	26.6	24.6	27.2	28.6	25.2	26.5	23.5	21.6	21.9	29.6	24.5	34.2	26	25.5	32.6	28.2	22.4	25.7	25.6
Venlafaxine	8.3	9.4	6.1	7.1	6.1	6.8	8.9	8.1	10.5	7.4	6.4	9	9.6	10	10.7	8.7	11.4	11.8	10	8.5	8.7	8.8
Mirtazapine	11	5.6	4.9	7.8	11.3	8.4	10.7	7.6	12	10.5	10.9	12.5	6.2	8.6	7.9	4	9.3	8.9	9.4	10.2	11.4	9

Chapter 6: Services Utilization

Background

Depression is associated with higher health care utilization (Brown, 1995; Howland, 1993; Mechanic, 1995; Simon, VonKorff, and Barlow 1995; Fischer et al., 2002). After controlling for medical comorbidity, depressed patients in many health care settings have more outpatient visits and longer hospital stays than non-depressed patients (Callahan et al., 1994; Huang et al., 2000). A large HMO study reported a 19% increase in outpatient encounters over a one-year period among depressed patients compared to nondepressed patients (Callahan et al. 1994). In Medicare patient samples, elderly patients with depression had more frequent hospital readmissions, diagnostic uncertainty, and complex medical conditions. (Moak, 2000; Marcantonio et al.1999).

Research suggests that cost-efficient care for patients with long-term disorders, such as depression, requires an optimal mix of acute care, extended care, and outpatient clinical services. Thus, we report utilization data for a wide range of services, including outpatient treatment and a variety of 24-hour institutional services.

All utilization data were obtained from the nationwide VA Patient Treatment File (PTF) and Outpatient Care Files (OPC) located at the Austin Automation Center in Austin, Texas.

Hospital Utilization

Approximately 10% of depressed patients seen in specialty settings had a psychiatric hospitalization during the year; approximately 12% had a non-psychiatric inpatient stay. Approximately 1.8% had both a psychiatric and a medical inpatient admission during the year.

Less than one percent (n=201) of depressed patients were only treated as inpatients, while 19.5% (n=59,577) had both inpatient and outpatient care.

The average inpatient length of stay in FY02 was 9 days, with psychiatric admissions having an average length of stay of 11 days and non-psychiatric admissions having an average length of stay of 8 days.

Large HMO's have reported psychiatric and medical hospitalization rates of 4% and 13%, respectively over a six month time period for depressed patients diagnosed in specialty settings (Katon, Personal communication, GHC database, Sept. 2002).

Other Institutional Care

Two and a half percent of patients in the depression registry had some domiciliary and vocational utilization in FY02, with an average length of stay of 75 days; 1.3% had nursing home care. (Domiciliary/Vocational care were defined using bedsection codes: Vocational(28, 29) and Domiciliary (85, 86, 87, 88).

Outpatient Utilization

The average number of clinic stops per patient in FY02 was 34 and the average number of psychiatric stops was 13. The average number of non-psychiatry clinic stops per patient in FY02 was 21.

In a large HMO, depressed patients averaged almost 18 total outpatient visits in one year for patients with depressive symptoms (Callahan et al. 1994). The 1997 Medical Expenditure Panel survey of the U.S. general population showed that the average number of depression-related outpatient visits in one year was 7.5 for depressed patients (Olfson et al. 2002). Thus outpatient use was higher among depressed veterans receiving specialty care. (See chapter 8 for more detailed information about outpatient use in VA specialty verus non-specialty settings.)

Psychiatric Comorbidity and Utilization

Patients with comorbid depression used significantly more inpatient and outpatient services in FY02 than patients with depression alone. Patients with one comorbidity had 1.5 times as many outpatient visits as did patients with depression alone and patients with two or more comorbidities had 2.3 times as many outpatient visits. Nine percent of patients with depression alone, 42% of patients with one comorbidity, and 49% with two or more comorbidities had a psychiatric hospitalization during FY02.

Table 6.A:
Hospital Based Utilization

Among patients with utilizaiton		Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
All Patients		N=158,768	67,890	57,720	20,744	305,122
Pts. with utilization	% (N)	12% (19,052)	40.1% (27,224)	15.1% (8,716)	23.2% (4,813)	19.6% (59,804)
Inpatient stays	Median	1	1	1	1	1
	Mean	1.6	1.8	1.5	1.7	1.7
	Std	1.1	1.5	1	1.2	1.3
Length of Stay	Median	4	6	4.5	6	5
	Mean	7.3	10.7	7.5	11.9	9.2
	Std	14.4	21.8	11.8	23.3	18.7
Cumulative Days of Stay	Median	6	9	6	9	7
	Mean	11.4	18.2	11.5	19.3	15.1
	Std	20.5	31.3	18.2	32.8	26.9

	Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
Cumulative DOS, %					
1 to 7	60.4	45.2	57.8	44.3	51.8
8 to 14	18.8	23	20.3	20.5	21.1
15 to 44	16.6	23.6	18.2	25	20.7
45 to 89	3.2	5	3	7.2	4.3
90 to 179	0.8	2.4	0.6	2.2	1.6
180 to 359	0.2	0.8	0.1	0.7	0.5
360+	0.1	0.1	0	0.1	0.1
All	100	100	100	100	100

Table 6.B:
Non-Psych Hospitalization

Among patients with Non-Psych Stays		Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
	All Patients	N=158,768	67,890	57,720	20,744	305,122
Pts. With non-psych stays	% (N)	10% (15,877)	16.6% (11,270)	10% (5,772)	14.4% (2,987)	11.8% (N=36,004)
Inpatient stays	Median	1	0	1	1	1
	Mean	1.3	0.7	1	1	1
	Std	1.2	1.1	1.1	1.2	1.2
Length of Stay	Median	4	4	3	4	4
	Mean	6.4	11.7	5.5	7.8	8
	Std	10.7	28.7	8.5	15.6	18.6
Cumulative Days of Stay	Median	4	0	2	2	2
	Mean	8.7	6.7	5.7	7.7	7.3
	Std	16	22.8	12.3	17.4	19.1

	Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
Cumulative DOS, %					
0	16.3	58.5	33.7	38	39.8
1 to 7	52.9	25.2	46.1	36.5	38
8 to 14	14.5	6.8	10.5	10.8	10.1
15 to 44	13.3	6.1	8.1	11.5	9.1
45 to 89	2.4	1.7	1.2	2.4	1.9
90 to 179	0.5	1.3	0.3	0.6	0.9
180 to 359	0.1	0.4	0	0.1	0.2
360+	0	0	0.	0	0
All	100	100	100	100	100

Table 6.C:
Psychiatric Hospitalization

Among patients with Psych Stays		Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
	All Patients	N=158,768	67,890	57,720	20,744	305,122
Pts. With psych stays	% (N)	2.4% (3,810)	29.2% (19,824)	6.1% (3,521)	11% (2,282)	9.6% (29,292)
Inpatient stays	Median	0	1	0	0	0
	Mean	0.2	1.2	0.5	0.7	0.7
	Std	0.6	1.3	0.8	1	1.1
Length of Stay	Median	7	7	7	10	7
	Mean	11.5	10.3	11.1	17.3	11.1
	Std	24.5	18.6	15.6	29.5	20.2
Cumulative Days of Stay	Median	0	6	0	0	0
	Mean	2.7	11.5	5.8	11.6	7.9
	Std	14	22.7	14.9	29.8	20.5

	Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
Cumulative DOS, %					
0	80.3	27.2	59.8	52.8	50.9
1 to 7	10.6	32.2	18	15.1	21.9
8 to 14	5	18.8	10.4	12.1	12.6
15 to 44	3.2	17.5	9.9	13.6	11.5
45 to 89	0.7	3	1.6	4.4	2.2
90 to 179	0.2	0.9	0.3	1.4	0.6
180 to 359	0.1	0.3	0.1	0.6	0.2
360+	0.1	0	0	0.1	0
All	100	100	100	100	100

Table 6.D:
Domiciliary/Vocational Care

Among patients with Dom/Voc Care		Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
	All Patients	N=158,768	67,890	57,720	20,744	305,122
Pts. With dom/voc care	% (N)	0.2% (318)	10.2% (6,925)	0.6% (346)	0.40% (83)	2.50% (7,628)
Number of stays	Median	1	1	1	1	1
	Mean	1.1	1.1	1.1	1.1	1.1
	Std	0.2	0.4	0.4	0.3	0.4
Length of Stay	Median	91	45	44	123	45.5
	Mean	149.6	71.4	77.7	164.1	75.6
	Std	132.5	72.3	91.2	139.6	79.2
Cumulative Days of Stay	Median	94.5	51	45	123	52
	Mean	155.4	78.8	82.9	172.3	82.9
	Std	133.9	76.7	94.3	141.8	83.1

	Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
Cumulative Days of Stay, %					
1 to 7	3.7	6	7	7.6	5.9
8 to 14	6.6	6.1	4.9	3.3	6
15 to 44	16.9	33.9	36.8	13	33.1
45 to 89	20.6	21.2	24.6	17.4	21.3
90 to 179	13.6	22.8	12.2	19.6	22
180 to 359	18.4	8.4	9.9	10.9	8.9
360+	20.2	1.7	4.6	28.3	2.8
All	100	100	100	100	100

Table 6.E:
Nursing Home Care

Among patients with Nursing Home Care		Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
	All Patients	N=158,768	67,890	57,720	20,744	305,122
Pts. with nursing home care	% (N)	1.1% (1,746)	1.5% (1,018)	0.9% (520)	3.9% (809)	1.3% (3.967)
Number of stays	Median	1	1	1	1	1
	Mean	1.2	1.2	1.2	1.3	1.2
	Std	0.6	0.5	0.6	0.6	0.6
Length of Stay	Median	25	28	26	29	27
	Mean	46.4	41	44.5	53.8	46.3
	Std	57.8	46.4	54.2	68.2	57.2
Cumulative Days of Stay	Median	30	31	30	32	31
	Mean	53.1	46.8	53	63	53.5
	Std	63.6	53.4	62.7	76.9	64.3

	Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
Cumulative DOS, %					
1 to 7	11.5	15.5	15.6	10.7	12.9
8 to 14	16.1	12.4	15.4	17.5	15.4
15 to 44	38	39.1	32.9	30.9	36.2
45 to 89	16.8	18.9	18.3	19	18
90 to 179	10.9	9.9	11.5	13.4	11.2
180 to 359	6.2	4.2	6.2	7.1	5.9
360+	0.5	.	0.2	1.3	0.5
All	100	100	100	100	100

Table 6.F:
Outpatient Care

Among patients with Outpatient Care		Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
	All Patients	N=158,768	67,890	57,720	20,744	305,122
Pts. with outpatient care	%	99.9%	99.9%	100.0%	99.9%	99.9%
Annual clinic stops	Median	17	31	26	24	21
	Mean	24.1	56.5	35.5	37.6	34.4
	Std	25.4	70.9	36.7	50.3	45.2
Annual non-psych stops	Median	13	16	16	17	14
	Mean	18.9	23.8	21.9	23.9	20.9
	Std	21.5	26.2	23.2	27.2	23.5
Annual psych stops	Median	3	10	7	5	4
	Mean	5.2	32.6	13.7	13.6	13.5
	Std	10.7	57.5	23.5	36.9	33.3
Annual visit days	Median	12	21	19	17	15
	Mean	16.5	34.6	24.7	25.1	22.7
	Std	16	41.8	22.8	29.2	27

	Dep/OthAnx	Dep/SAbuse	Dep/PTSD	Comp.Dep	All
Outpatient visit days, %					
1 to 12 days	50.4%	31.1%	31.5%	34.4%	41.4%
13 to 24 days	30.5%	25.2%	32.3%	33.1%	29.8%
25 to 36 days	11.2%	14.8%	17%	15.8%	13.4%
37 to 48 days	4.2%	8.6%	8.9%	6.8%	6.3%
49+ days	3.6%	20.2%	10.4%	9.9%	9%
Some Non mental health-specialty care	85.7%	77%	87.1%	85.1%	84%
Some Non mental health-specialty care for Depression	15.5%	16.6%	12.7%	14.6%	15.2%

Section 6.A:

Overall Hospital-Based Utilization by VISN

Number of patients	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vis23
	15,261	8,357	11,389	13,786	7,424	13,955	17,387	28,388	14,096	12,800	12,166	11,393	14,167	27,988	13,648	13,329	8,791	15,508	13,814	17,217	14,258

		Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vis23	All
Percent with Use		19.6	16.8	17.2	17.3	27.8	22.3	19.4	17.2	23.2	19.1	19.3	24.6	21.8	18.7	20.5	20	20.2	20.8	16.7	16.5	19.6	19.6
For those with Use																							
Inpatient Stays	Mean	1.8	1.7	1.7	1.6	1.9	1.8	1.6	1.7	1.7	1.7	1.7	1.8	1.7	1.6	1.8	1.7	1.6	1.6	1.7	1.6	1.7	1.7
	Std	1.4	1.4	1.2	1.2	1.6	1.4	1.2	1.3	1.3	1.3	1.3	1.4	1.3	1.2	1.5	1.2	1.2	1.1	1.3	1.2	1.3	1.3
Length of Stay	Mean	13.1	7.67	11.2	9.64	9.41	9.33	9.2	7.67	8.32	12.26	8.41	11.58	9.03	10.24	9.91	6.14	8.06	9.2	8.31	8.45	6.38	9.23
	Std	27.4	13.3	20.5	22.35	19.62	15.54	17.34	11.91	17.81	25.53	16.07	29.61	15.68	19.36	21.16	6.49	10.15	21.93	15.24	12.51	11.59	18.66
Cumulative days of stay	Mean	22	12.7	18.7	15.3	17.4	16.1	14.5	12.8	13.7	19.1	13.9	18.4	15	16.7	16.7	10.5	13.7	13.5	13.8	13.4	10.5	15.1
	Std	39.8	18.9	31.1	29.2	30.9	25.8	23.9	19.9	24.9	35.7	23.6	37.4	25	29.5	30.3	14.6	20.7	24.8	22.4	20.2	17	26.9

	Visn1	Vis2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Vis20	Visn21	Visn22	Visn23	Total
DOS, %																						
1 to 7 days	47	51.7	44.8	49.7	50.8	46	51.5	54.8	54.6	51.5	50.9	48.7	51.2	53.2	48.4	57.4	51.3	52	51	53.3	62.2	51.8
8 to 14	19.6	22.8	19.8	22.2	20.5	22.9	22	20.7	21.4	20.4	24	22.3	22.2	19	21.2	20.5	21	22	22.1	20.1	17.9	21.1
15 to 44	22.1	21.1	26.8	21.9	20.1	24.6	20.3	19.4	18.6	18	19.7	21.4	19.6	19.1	23.2	19.4	21.7	22	21.7	21.3	16.8	20.7
45 to 89	6.1	3.5	5.7	4.4	5.2	4.5	4.5	3.9	3.4	5.4	3.9	3.9	5	5.7	4.7	2.4	4.9	2.7	3.7	4	2.5	4.3
90 to 179	3.9	0.7	2.3	1.1	2.8	1.4	1.4	0.9	1.6	3.2	1.1	2.1	1.6	2.4	1.6	0.3	0.8	0.9	1.2	1.2	0.5	1.6
180 to 359	1.1	0.1	0.6	0.5	0.5	0.6	0.3	0.2	0.3	1.3	0.3	1.4	0.5	0.6	0.7	0.1	0.3	0.5	0.2	0.1	0.1	0.5
360+	0.2	0.1	0.1	0.3	0.1	0	0	0	0.1	0	0.1	0.1	0	0	0.1	0	0	0.1	0	0	0	0.1
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Section 6.B:

Non-Psychiatric Utilization by VISN

Number of patients	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vi 23
	15,261	8,357	11,389	13,786	7,424	13,955	17,387	28,388	14,096	12,800	12,166	11,393	14,167	27,988	13,648	13,329	8,791	15,508	13,814	17,217	14,258

		Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vis23	All
Percent with Use		10	10	10.5	10.2	13.7	11.4	11.7	12.1	13.3	11.8	11.1	15.1	13.5	11.7	11.7	13.5	12.2	11.8	10.1	10.2	13	11.8
For those with Use																							
Inpatient Stays	Mean	0.8	0.9	1	0.9	0.8	0.8	0.9	1.1	0.9	1	0.9	1	1	1	0.9	1.1	0.9	0.9	0.9	0.9	1	1
	Std	1.1	1.2	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.1	1.1	1.1	1.2	1.2
Length of Stay	Mean	12	6.3	8.9	5.8	10.3	8.1	8.6	8.1	8.2	14.8	5.3	11.2	7.3	9.3	8.3	4.7	5.9	5.6	6.4	6.3	5.6	8
	Std	26.5	9.3	14.8	8.1	24.7	19.1	19.3	13.8	20.7	32.8	8.8	34	18.4	20.1	18.4	5.8	8.4	14.4	13.3	11.7	8.4	18.6
Cumulative days of stay	Mean	8.1	6	9.2	5.8	7.8	6.1	7.4	8.9	7.1	12	5.3	9.7	6.8	8.7	7.1	5.5	5.7	5	5.8	5.9	6	7.3
	Std	22.3	12.3	21.6	13.6	23.7	16.5	19.4	18.3	19.6	30.5	13.3	30.6	18.2	22.1	19.4	10.4	12.8	13.6	14	13.2	11.5	19.1

	Visn1	Vis2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Vis20	Visn21	Visn22	Visn23	Total
DOS, %																						
0 days	49.2	40.8	39.3	41.3	50.7	49	39.6	29.6	42.8	38.1	42.8	38.5	38.2	37.4	42.9	32.2	39.5	43.5	39.6	38	33.5	39.8
1 to 7	30.3	36.2	33.8	38.2	30.7	31.2	39.7	40.8	36.2	35.6	38.8	38	40.4	38.5	35.1	47	39	39.1	39.5	40.2	44	38
8 to 14	7.7	10.3	9.8	9.9	6.9	9.6	9	12.4	9.5	9.8	9.3	10	10.8	10.8	10.4	10.8	11.4	8.5	10.9	10.9	11.4	10.1
15 to 44	8.4	11	12.9	8.5	7.4	7.8	8	13.5	8.7	9.1	7.7	9.6	8	8.7	8.9	8.8	8.6	7.6	8.3	9.2	9.7	9.1
45 to 89	2.2	1.4	2.9	1.8	2.7	1.5	2.4	2.9	1.8	4	1	1.7	1.6	2.6	1.6	1	1.1	0.9	1.4	1.3	1.2	1.9
90 to 179	2.1	0.2	1	0.3	1.4	0.6	1.1	0.7	0.9	2.6	0.3	1.2	0.8	1.6	0.8	0.2	0.3	0.3	0.3	0.4	0.3	0.9
180 to 359	0.1	0.1	0.3	.	0.2	0.2	0.2	0.2	0.2	0.8	0.2	0.9	0.3	0.3	0.2	0	0.1	0.1	0.1	0.1	0	0.2
360+	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Section 6.C:
Psychiatric Utilization by VISN

Number of patients

Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vis23
15,261	8,357	11,389	13,786	7,424	13,955	17,387	28,388	14,096	12,800	12,166	11,393	14,167	27,988	13,648	13,329	8,791	15,508	13,814	17,217	14,258

		Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vis23	All
Percent with Use		11.76	8.2	8.25	8.61	17.71	13.16	9.54	6.35	12.05	9.34	10.25	12.1	10.76	8.69	10.95	8.07	9.79	10.72	8.02	7.44	8.18	9.62
For those with Use																							
Inpatient Stays	Mean	1	0.7	0.7	0.7	1.1	0.9	0.7	0.5	0.7	0.7	0.8	0.8	0.7	0.7	0.9	0.6	0.7	0.7	0.8	0.7	0.6	0.7
	Std	1.3	1.1	1	1	1.4	1.2	1	1	1	1	1	1.2	1	1	1.3	1	1	0.9	1.2	1	1.1	1.1
		Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Visn23	
Length of Stay	Mean	14.8	9.3	14	14.2	9.2	11.1	10.1	7	8.8	10.7	11.8	12.5	11.9	12	12	8.7	11.1	12.8	10.7	11.4	7.7	11.1
	Std	30.7	16.4	24.9	30.4	17.7	16.7	15.2	7.6	14.8	20	20.6	26.8	16.2	21.2	24.2	7.2	12	26.3	16.6	13.7	15.6	20.2
Cumulative days of stay	Mean	13.8	6.6	9.5	9.5	9.6	10	7.1	3.8	6.7	7.1	8.6	8.7	8.2	7.9	9.7	5.1	8	8.5	8	7.5	4.6	7.9
	Std	34.7	15.9	25.1	26.9	21.2	20.7	16.1	10.3	16.8	18	20.9	23.7	18.6	21.5	24.4	11.6	17.6	22.2	18.8	16.9	14	20.5

	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Vis20	Visn21	Visn22	Visn23	Total
DOS, %																						
0 days	40	51.2	52.1	50.3	36.3	40.9	50.8	63	48.1	51.1	47	50.7	50.7	53.6	46.6	59.7	51.6	48.5	51.9	54.9	58.3	50.9
1 to 7	25.7	22.6	17.7	18.6	32	22.5	20.4	21.4	26.9	24.1	21.9	20.2	20.4	22.2	21.2	17.9	19.5	19.8	18.7	19.3	26.3	21.9
8 to 14	13.8	13.5	12.1	13.9	14.9	15.8	14.2	9	13.4	12.6	16.3	13.7	13.7	9.9	13.7	10.8	11.9	15.7	13.5	10.4	7.7	12.6
15 to 44	13.8	10.5	14.3	13.5	12.8	17.2	12.3	5.7	9.5	9.6	11.2	12	11.3	10.5	14.5	10.4	13.2	13.5	13	12.2	6.3	11.5
45 to 89	3.9	1.7	2.3	2.3	2.7	2.6	2	0.7	1.6	1.8	2.6	1.8	3.2	2.9	2.8	1.2	3.3	1.4	2	2.4	1.1	2.2
90 to 179	1.7	0.4	1.1	0.8	1.2	0.7	0.1	0.1	0.4	0.6	0.8	1	0.6	0.6	0.8	0.1	0.4	0.6	0.7	0.8	0.3	0.6
180 to 359	0.8	0.	0.3	0.4	0.2	0.3	0.1	0.1	0.1	0.2	0.1	0.4	0.1	0.3	0.4	0	0.2	0.4	0.2	0	0.1	0.2
360+	0.2	0.1	0.1	0.2	0	0	0	0	0.1	0	0.1	0.1	0	0	0.1	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Section 6.D:

Nursing Home Care by VISN

Number of patients	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vis23
	15,261	8,357	11,389	13,786	7,424	13,955	17,387	28,388	14,096	12,800	12,166	11,393	14,167	27,988	13,648	13,329	8,791	15,508	13,814	17,217	14,258

		Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vis23	All
Percent with Use		1.3	1.8	0.8	1.6	1.2	0.9	0.7	1.2	1	1.4	1.4	1.6	1.8	0.6	1.3	1.9	0.6	1.4	1.9	1.5	2.9	1.3
For those with Use																							
Number of Stays	Mean	1.3	1.2	1.1	1.3	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.1	1.2	1.2	1.1	1.2	1.2	1.2	1.4	1.2	1.2	1.2
	Std	0.8	0.5	0.3	0.6	0.4	0.4	0.2	0.5	0.7	0.5	0.5	0.3	0.6	0.4	0.4	0.5	0.5	0.5	1.2	0.5	0.5	0.6
Length of Stay	Mean	38.5	36.6	86.4	43.2	46.1	56.4	62	48.3	45.7	57	49.5	42.2	39.4	56.8	64.4	33.5	49	35.6	47.5	46.9	37.4	46.3
	Std	53.4	45.1	85.6	48.3	59.1	60.3	63.9	59.5	45.4	70.9	50.9	55.1	48	63.2	76.3	39.3	53	49.9	60.8	57.6	50	57.2
Cumulative days of stay	Mean	51.1	43.4	91.6	53	54.3	60	64.8	56.8	53	63.5	59.7	46.1	44	63.3	71.3	41.7	59.1	40.6	57.4	54.9	42.6	53.5
	Std	72.8	50.4	86.5	56.9	72.1	62.7	68.5	68.1	55.4	75.7	67.3	58.9	48.8	69.4	81.5	50.7	61.8	53.1	70	66.9	53.6	64.3

	Visn1	Vis2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Vis20	Visn21	Visn22	Visn23	Total
DOS, %																						
1 to 7 days	20.2	13.3	8.5	15.7	22	6.1	5	8.1	8.8	10.3	8.7	16.7	12	12.3	12.1	10.5	12.7	11.2	16.9	10.3	20.1	12.9
8 to 14	10.6	19.3	7.4	13.8	15.4	14.4	19.3	22.3	6.6	13.8	12.8	12.4	16.5	11	11.5	24.2	9.1	21.4	10	16.6	15.8	15.4
15 to 44	42.4	38.7	21.3	29	29.7	36.4	27.7	30.9	51.5	35.6	36.6	46.8	37.8	38	30.5	37.9	38.2	43.7	34.6	35.6	34.9	36.2
45 to 89	12.6	14.7	23.4	20.3	14.3	22.7	26.9	19.4	19.9	19.5	21.5	11.3	22.1	12.9	22.4	14.5	18.2	13	18.1	19.8	16	18
90 to 179	6.1	10.7	23.4	17.1	9.9	14.4	10.1	11.8	6.6	10.3	14.5	7	8.8	16	13.2	10.1	12.7	7	13.1	10.7	10.3	11.2
180 to 359	7.6	3.3	12.8	3.7	8.8	5.3	10.1	6.9	6.6	9.8	5.8	5.4	2.4	9.8	9.2	2.8	9.1	3.7	6.5	6.3	2.4	5.9
360+	0.5	0	3.2	0.5	0	0.8	0.8	0.6	0	0.6	0	0.5	0.4	0	1.1	0	0	0	0.8	0.8	0.5	0.5
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Section 6.E: Outpatient Utilization by VISN

Non-Psychiatric Utilization by VISN		Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vis23	All
Percent with Use		99.9	100	99.9	100	99.9	100	99.9	100	99.9	99.9	99.9	99.9	99.9	100	99.9	99.9	100	99.9	99.9	99.9	99.9	99.9
For those with Use																							
OP visit days	Mean	26.6	26.4	27.6	20.5	31.7	18.8	20.9	21.1	17.2	24.6	20	30.4	20	19.1	22.8	21.3	21.6	23.2	25.7	25.8	23	22.7
	Std	32.7	30	36.5	26.4	42.9	21.5	22.9	20.7	15.6	30.4	25.2	40	23.6	21.3	26.7	19.5	20	23.8	30.5	31.3	27.6	27

		Visn1	Vis2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Vis20	Visn21	Visn22	Visn23	Total
DOS, %																							
1 to 12 Visit Days		37.6	35.7	42.1	46.2	38.1	46.7	43.6	37.9	46.9	38.4	49	36.3	45.6	46.7	41.5	38.2	39	38.4	35.7	37.8	43	41.4
13 to 24		28.5	29.7	25	29.7	25	31	29.6	34.2	32.2	29.4	27.4	26.6	30.4	31.3	29.6	31.8	31.4	29.1	29.8	28.4	27.7	29.8
25 to 36		13.5	14.7	11.8	11.9	12.9	12.3	13.3	14.9	12.4	14.7	11.5	14.6	12.3	11.2	13.5	15.8	14.3	14.7	15.3	14.4	12.9	13.4
37 to 48		7.7	7.2	6.8	5.3	6.8	4.9	5.9	6.4	4.7	6.9	4.9	7.2	5.2	4.7	6.2	6.8	6.9	7.6	7.6	7.4	6.5	6.3
49+		12.6	12.7	14.3	6.9	17.2	5.2	7.7	6.6	3.8	10.6	7.3	15.3	6.5	6.1	9.2	7.4	8.4	10.2	11.6	12	9.9	9
Total		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

		Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Visn23	All
Had Non MH-Specialty Care, %		82.2	87.5	80.3	82.2	80.7	83.4	84.6	89.6	84.8	84.7	85.3	84.7	84.8	85.5	88	85.2	83.3	76.4	83.7	82.6	77.1	84
Total Clinic stops	Mean	37.8	39.1	40.6	30.1	49.1	28.5	33.1	31.5	27.5	37.1	30.6	49.4	31.6	28.9	34.3	31.6	30.7	33.2	35.4	37.9	42.7	34.4
	Std	49.2	51.8	58.8	38.3	71	33.7	43	36.5	27.4	50.1	41.1	68.2	40.3	34.4	40.9	32.3	32.6	36.8	48.7	54.1	58.9	45.2
Non-Psych Clinic Stops	Mean	20.2	21.4	22.4	18.4	25.1	19.3	20.7	23.2	20.7	18.6	18.2	25.5	19.5	18.9	23.4	21.1	19.2	19.3	19.5	23.3	22.9	20.9
	Std	23.8	25.1	27.2	20.3	29	21.5	22.2	22.6	20.7	19.4	20.7	28.1	22.3	19	26.5	21.7	20.3	22.1	21.4	30.3	28.2	23.5
Psych Clinic Stops	Mean	17.7	17.7	18.1	11.8	24	9.2	12.4	8.3	6.7	18.5	12.4	23.8	12.1	10.1	10.8	10.6	11.5	13.8	15.9	14.6	19.8	13.5
	Std	37.7	39.6	44.6	29.1	56	21.9	28.4	23.2	15.1	42	31.4	55.5	28.5	24.5	25.2	20.7	21.7	25.3	39.1	37.3	45.7	33.3
Had Non MH-Specialty care for depression%		13.8	14.4	15.4	14	13.8	17.7	14.3	15.2	18.1	12	14.9	15.7	14.6	15.9	18.4	19	16.4	14.3	12.7	13.5	13.6	15.2

Chapter 7: Costs

Background

The United States spends approximately 1% of its total Gross Domestic Product for the treatment of mental illness.(McGuire 1991) In 1990, the direct treatment costs for depression in the United States were $12 billion, with $1-2.9 billion spent on mental health specialists(Greenberg et al. 1993). However, the direct costs of mental health care account for only a fraction of the difference in healthcare expenditures between depressed and nondepressed patients (Simon, VonKorff and Barlow,1995).

Depressed patients have almost double the medical expenditures of nondepressed patients, even after adjusting for comorbidity (Simon, VonKorff, and Barlow 1995). Depression is associated with longer hospital stays and higher costs,(Levenson, Hamer, and Rossiter 1990) and depressed patients have nearly three times the outpatient pharmacy costs compared to patients not taking antidepressants (Simon, VonKorff, and Barlow 1995). However, antidepressant drugs account for less than half of these cost differences.

Increases in non-mental health specialty utilization is particularly important among depressed elderly patients, who have higher rates of medical illness and who are less likely than younger patients to see a mental health specialist (Unutzer et al. 1997) (Blazer, 1996).

To provide the broadest range of information, we report on total costs for depressed patients in FY02, the relative costs of psychiatric and medical care, and the relative costs of inpatient and outpatient care.

The Allocation Resource Center (ARC) in Braintree, Massachusetts provided the cost data for each patient by facility and cost center. Please see Appendix D for detailed information about ARC cost data.

Findings

Approximately $3.0 billion was spent in FY02 for medical and psychiatric care for depressed patients. The mean expenditure per patient was $12,200.

Twenty-seven percent of all healthcare costs were for psychiatric care; 92% of costs were for outpatient services and 8% for inpatient services.

When mean patient costs were compared across cost centers, the top cost center was psychiatry ($985), followed by medical ($912) and surgical ($513). For a more detailed description of services included in each cost center, please see Appendix D.

Table 7.A: Costs, by Diagnosis Grouping

		FY02 Patients with Depression				All
		Dep alone or w/OthAnx	Dep + SAbuse	Dep + PTSD	complicated Dep	
		N=158,768	N=67,890	N=57,720	N=20,744	N=305,122
Total DSS cost (in thousands $$)		$1,124,978	$997,607	$528,760	$252,622	$2,903,967
	%	39%	34%	18%	9%	100%
Psych vs. Non-Psych costs						
Psychiatric costs	%	20.9%	40.3%	28.5%	24.9%	27.0%
Non-psychiatric costs	%	79.1%	59.7%	71.5%	75.1%	73.1%
Total	%	100	100	100	100	100
Hospital costs, (pts with hospital use)						
Per patient	Mean	$12,719	$11,646	$11,020	$15,417	$12,200
Per day of stay	Mean	$1,452	$920	$1,280	$1,064	$1,153
Outpatient (OP) costs, pts with OP use						
Per patient	Mean	$5,064	$7,400	$6,923	$7,084	$6,073
Per visit day	Mean	$327	$272	$306	$329	$311
Patient costs by cost center, all pts						
Medical	Mean	$815	$1,221	$665	$1,328	$912
Surgical	Mean	$501	$581	$470	$505	$513
Psychiatric	Mean	$224	$2,893	$553	$1,773	$985

Number of patients	Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Vis23
	15,261	8,357	11,389	13,786	7,424	13,955	17,387	28,388	14,096	12,800	12,166	11,393	14,167	27,988	13,648	13,329	8,791	15,508	13,814	17,217	14,258

Section 7. Cost by VISN

ALL COSTS ARE IN THOUSANDS OF DOLLARS

Total FY02 DSS Costs,																					Overall = $2,903,967
Visn1	Visn2	Visn3	Visn4	Visn5	Visn6	Visn7	Visn8	Visn9	Visn10	Visn11	Visn12	Visn15	Visn16	Visn17	Visn18	Visn19	Visn20	Visn21	Visn22	Visn23	
160,735	82,924	137,924	126,399	89,468	117,322	147,749	229,919	122,759	120,206	104,301	135,276	120,169	231,264	128,479	110,264	85,337	161,128	155,626	184,662	152,055	
Psychiatric costs, %																					Overall % = 27%
34.9%	28.7%	27.5%	26.8%	30.1%	25.9%	25.7%	20.7%	21%	29.9%	27%	27.5%	21.8%	25%	25.4%	27.2%	28.2%	32.8%	31.1%	29%	30%	
Hospital Costs per Patient (Mean for patients with Hospital Use)																					Overall Mean = $12,200
$13,334	$12,828	$17,585	$13,495	$12,546	$10,859	$11,523	$10,261	$10,928	$10,550	$11,949	$13,800	$10,578	$12,294	$11,069	$10,626	$13,345	$11,624	$14,898	$14,571	$12,303	
Hospital Costs per Day of Stay (Mean for patients with hospital use)																					Overall Mean = $1,153
$996	$1,189	$1,218	$1,228	$977	$1,011	$1,222	$970	$1,107	$993	$1,160	$1,176	$959	$1,174	$941	$1,247	$1,409	$1,222	$1,461	$1,430	$1,411	
Outpatient Costs per Patient (Mean for patients with outpatient use)																					Overall Mean = $6,073
$6,935	$6,366	$7,195	$5,510	$6,511	$5,304	$5,750	$5,556	$5,407	$5,853	$5,415	$6,664	$5,204	$5,390	$5,782	$5,455	$6,450	$6,679	$7,397	$7,383	$6,820	
Outpatient Costs per Visit Day (Mean for patients with outpatient use)																					Overall Mean = $311
$309	$276	$321	$320	$269	$315	$315	$282	$336	$270	$330	$288	$311	$323	$296	$278	$321	$338	$323	$327	$359	
Medical Costs (Mean for all patients)																					Overall Mean = $912
$639	$871	$1,252	$804	$1,079	$849	$886	$927	$1,085	$711	$897	$1,407	$955	$875	$800	$972	$913	$870	$727	$887	$1,003	
Surgical Costs (Mean for all patients)																					Overall Mean = $513
$488	$457	$582	$556	$559	$405	$467	$387	$544	$405	$456	$606	$390	$486	$541	$509	$558	$633	$688	$575	$656	
Psychiatric Costs (Mean for all patients)																					Overall Mean = $985
$1,511	$842	$1,218	$998	$1,885	$1,175	$899	$464	$933	$904	$977	$1,404	$995	$953	$939	$655	$1,250	$944	$1,110	$961	$788	

Chapter 8: Primary Care Treatment

Background

Depression is one of the most common disorders encountered by primary care providers (Katon 1987; Ballenger et al. 1999). In the private sector, most depressed patients are treated in the general medical rather than the mental health settings (Schurman, Kramer, and Mitchell 1985; Regier et al. 1993; Kessler et al. 1994). However, primary care physicians detect only 24% to 64% of patients with major depression (± dysthymia) and presumably give a formal depression diagnosis to even a smaller percentage (Simon and VonKorff 1995; Coyne, Schwenk, and Fechner-Bates 1995; Tiemens, VonKorff, and Lin 1999; Kirmayer et al. 1993; Depression Guideline Panel 1993; Coyne, Fechner-Bates, and Schwenk 1994; Tiemens, Ormel, and Simon 1996; Hirschfeld et al. 1997; Wells et al. 1989; Ormel et al. 1991). Mental health clinicians are more likely to give formal diagnoses of depression and see depressed patients more frequently. Of all visits for depression in 1993-1994 in the National Ambulatory Medical Care Survey, 35.6% were to primary care physicians and 58.6% were to psychiatrists (Pincus et al. 1998).

The VA may differ from private care settings in the treatment of depressed patients. The VA has been committed to providing an array of mental health services for veterans and does not impose severe limits on mental health visits as do many managed care organizations (MCOs). MCOs' coverage policies have deliberately shifted the treatment of patients from mental health to primary care providers, and typically provide a maximum of 20 specialty mental health visits per year. Only 10% of depressed patients in prepaid plans consider a psychiatrist to be their main source of care, compared to 22% of depressed patients in fee-for-service settings (Sturm, Meredith, and Wells 1996).

Primary Location of Depression Treatment

Most patients who received a diagnosis of depression in the VA are seen at least once in mental health settings. There were a total of 542,075 patients diagnosed with depression during a visit in specialty mental health care or in primary care or other non-mental health settings. 331,399 of these patients (61%) had at least one visit with a diagnosis of depression in specialty mental health, while 210,676 (39%) had visits with a diagnosis of depression only in primary care. (When patients with a diagnosis of Bipolar I during the year were excluded, 305, 122 patients were seen at least once in specialty settings and 204,272 only in primary care.)

A more detailed examination of location of depression treatment among the 507,791 depressed patients using outpatient services showed that 56% of patients had more than fifty percent of their visits with a diagnosis of depression in mental health specialty settings; 4% of patients had more than fifty percent of their visits with a diagnosis of depression in primary care, and 40% of patients had all of their visits with a diagnosis of depression in primary care (See Tables 8.A and 8.B).

Table 8.A: Location of Treatment considering OP visits with a Diagnosis of Depression

Primary Care Only	>50% Primary Care	>50% Mental Health Care	All
N (%)	**N (%)**	**N (%)**	**N (%)**
202871 (40%)	20997 (4%)	283923 (56%)	507791 (100%)

Table 8.B: Location of Treatment considering OP visits with a Diagnosis of Depression, by Comorbidity Group

	Depression alone/ONLY with OthAnx	Depression + any SAbuse	Depression + any PTSD	Other Complicated Dep	All
Primary Care Only	50 %	23 %	20 %	37 %	40 %
> 50% Primary Care	3 %	7 %	4 %	5 %	4 %
> 50% Mental Health Care	47 %	71 %	76 %	58 %	56 %
All	100 %	100 %	100 %	100 %	100 %

Joint treatment of depression, when patients are seen by mental health specialists but PCPs provide the majority of mental health care, appears relatively rare. This is in line with the literature, which suggests that only 5% to 16% of the patients identified as depressed by their primary care physicians are referred to MHP (Orleans et al. 1985)(Coulter et al., 1989).

Please note that while depressed patients received their depression-focused care predominantly in mental health settings, the majority of depressed patients (84%) had more primary care and other non-mental health use than specialty use. Only 16% of depressed patients had most of their healthcare-related visits in specialty mental health (See Table 8.C).

Table 8.C: Location of Treatment considering ALL OP visits made to VA OP Clinics

Primary Care Only	>50% Primary Care	>50% Mental Health Care	All
N (%)	**N (%)**	**N (%)**	**N (%)**
161,998 (32%)	265,779 (52%)	80,014 (16%)	507,791 (100%)

Predictors of Treatment in Primary Care

Depressed patients who received all of their depression-related treatment in primary care were older, more likely to be male, and less likely to have a psychiatric comorbidity. Patients seen in primary care settings were also more likely to have "unknown" race. Aside from the increased representation of men, this is in line with the literature describing predictors of depression treatment in primary care rather than specialty settings.

Table 8.D: Predictors of Depression-Related Treatment: Age

	Location of Depression-Focused Care			All
	Primary Care Only	>50% Primary Care	>50% Mental Health Care	
	N=202,871 (40%)	N=20,997 (4%)	N=283,923 (56%)	N=507,791
Mean Age	62.0	56.5	55.4	58.1
Std.	14.0	13.7	13.0	13.8
Age, % < 35 years	3.2%	4.9%	5.6%	4.6%
35 - 49 years	16.3%	27.2%	27.1%	22.8%
50 - 64 years	35.9%	41.4%	44.4%	40.9%
65 - 79 years	34.9%	20.7%	19.2%	25.5%
>= 80 years	9.7%	5.8%	3.8%	6.2%
All	100.00	100.00	100.00	100.00

Table 8.E: Other Predictors of Depression-Related Treatment

	Location of Depression-Focused Care			All
	Primary Care Only	>50% Primary Care	>50% Mental Health Care	
	N=202,871 (40%)	N=20,997 (4%)	N=283,923 (56%)	N=507,791
Gender				
female	7.7%	9.9%	9.6%	8.9%
male	92.3%	90.1%	90.4%	91.1%
Race/Ethnicity				
Hispanic	3.5%	5.1%	5.2%	4.5%
American Indian	0.3%	0.3%	0.4%	0.3%
Black	8.5%	14.2%	12.8%	11.1%
Asian	0.2%	0.3%	0.3%	0.3%
White	54.6%	61.4%	60.2%	58.0%
Unknown	32.9%	18.7%	21.1%	25.7%
Marital Status				
Divorced or Separated	22.8%	32.4%	29.9%	27.2%
Married	57.7%	46.1%	48.2%	51.9%
Never Married	11.1%	15.2%	17.0%	14.6%
Widowed	8.3%	6.2%	4.9%	6.3%

Treatment Practices

Veterans who received depression focused treatment only in primary care were seen less often than patients seen in specialty mental health, as has been reported for in the general treatment population (Frank and Kamlet, 1990). The mean number of clinic visits with a depression diagnosis was 1.5 for patients seen for depression treated only in primary care, 6.1 for patients with >50% of their depression treatment in primary care, and 5.2 for patients with >50% of their depression treatment in specialty mental health.

Table 8.F: Number of Primary Care Clinic Stops with a Diagnosis of Depression

		Primary Care Only	>50% Primary Care	>50% Mental Health Care	All
Primary stops w/Dep Dx	**Mean**	1.5	4.5	0.6	1.1
	Std	2.5	10.0	1.7	3

Table 8.G: Total Number of Clinic Stops with a Diagnosis of Depression

		Primary Care Only	>50% Primary Care	>50% Mental Health Care	All
OP stops w/Dep Dx	**Mean**	1.5	6.1	5.2	3.8
	Std	2.5	12.1	11.6	9.3

Table 8.H: Number of Primary Care Clinic Stops with a Diagnosis of Depression

		Primary Care Only	**>50% Primary Care**	**>50% Mental Health Care**	**All**
N (%) of Patients		202,871 (40%)	20,997 (4%)	283,923 (56%)	507,791 (100%)
Annual visit days	**Mean**	13.1	23.6	22.6	18.8
	Std	16.6	24.7	27.2	23.9
Annual Clinic Stops	**Mean**	19.8	36.8	34.2	28.6
	Std	27.4	42.8	45.4	39.7

Psychotropic Use

In the community, the bulk of antidepressants are prescribed by primary care physicians rather than by psychiatrists (Hohmann et al 1991). Following a diagnosis of depression, antidepressants are offered to 33-59% of primary care patients (Callahan, Dittus, and Tierney 1996), and antidepressants are prescribed in 50-60% of encounters in which depression is noted as a reason for the encounter (Pincus et al 1998).

In the VA, large majorities of depressed patients received antidepressants, regardless of where they receive their care. However, patients receiving depression focused treatment solely in primary care were less likely to receive antidepressants (73%) than patients receiving some (>50% primary care) or most (>50% MH care) of their depression treatment in mental health specialty settings (86%% and 83%, respectively). Patients treated only in primary care were less likely to be treated with multiple psychotropic medication classes. Perhaps surprisingly, depressed patients seen only in primary care settings were less likely to receive benzodiazepines than patients seen in specialty settings.

Table 8.I: Use of Psychotropic Medications, by Location of Care for Depression

	Primary Care Only	>50% Primary Care	>50% Mental Health Care	Overall
Number (%) of Patients	202,871 (40%)	20,997 (4%)	283,923 (56%)	507,791
Received meds from >=4 Psychotropic Classes,	1.0 %	7.7 %	10.3 %	6.0 %
Psychotropics	79.3 %	92.0 %	88.9 %	87.5 %
Antidepressants	73.3 %	86.3 %	82.7 %	81.6 %
Antipsychotics	3.0 %	16.4 %	26.2 %	13.7 %
Benzodiazepines	17.4 %	33.3 %	28.2 %	27.4 %
Other Antianxiety	3.0 %	10.0 %	11.0 %	8.0 %
Mood Stabilizers	9.0 %	19.5 %	17.8 %	15.9 %
Stimulants	0.3 %	1.0 %	1.6 %	0.9 %
Anticolinesterases	2.4 %	2.6 %	0.8 %	2.2 %
Antihistamine/Antiparkinson	6.7 %	15.5 %	17.1 %	12.9 %
Alcohol Treatment	0.1 %	0.6 %	2.6 %	0.7 %

Adequate Follow-up of Newly Diagnosed Cases of Depression

Of the 507,791 patients diagnosed with depression in the VA in FY02 who also had outpatient utilization, 20,019 (4%) were identified as newly diagnosed cases of depression using the criteria established by the Office of Quality Performance.
Only 2% of patients receiving all of their care for depression in Primary Care settings had adequate follow-up compared to 13% in specialty mental health settings (three or more outpatient follow-up visits with a primary care or mental health practitioner). Receipt of adequate antidepressant prescriptions during the acute (84-day) treatment phase was high across locales of treatment.

Table 8.J: Adequate Antidepressant Medication Management, by Location of Care for Depression

	Primary Care Only	>50% Primary Care	>50% Mental Health Care	All
Number of Patients (%)	7468 (37%)	1041 (5%)	11510 (58%)	20,019
Met OQP Follow-up Visit Measure	1.8%	13.3%	12.5%	8.60%
Met OQP Adequate Medication Measure	66.5%	65.7%	63.2%	64.60%

Appendix A: Inclusion Criteria

Qualifying Diagnoses and Location of Treatment

Patients in this Depression Report were identified using data obtained from the nationwide VA Patient Treatment File (PTF) and the Outpatient Cares File (OPC) located at the Austin Automation Center in Austin, Texas. Patients were included provided they had at least one qualifying depression diagnosis in the FY02 inpatient or outpatient dataset for mental health specialty locations. The qualifying ICD-9 diagnoses codes, their frequencies in terms of percentages of the Depression Registry population, and the distribution of the number of qualifying diagnoses per patient are listed below:

Qualifying Diagnoses: (In order of greatest frequency)	Frequency: (In terms of %)
311 Depressive Disorder NOS	46.2%
296.3 MDD, recurrent episodes	36.8%*
300.4 Dysthymia	22.8%
296.2 MDD, single episode	18.0%*
309.0 Adjustment Disorder with Depressed Mood	5.2%
293.83 Mood Disorder due to Medical condition	6.0%
296.90 Mood Disorder NOS	3.1%
309.1 Prolonged Depressive Reaction	1.5%
296.99 Other Specified Affective Disorders	0.2%
301.12 Chronic Depressive Personality Disorder	0.02%

Number of Qualifying Diagnoses Per patient:	Frequency: (In terms of %)
1	69%
2	24%
3 or more	7%

Locale of Treatment

Inpatient (by bed section):

General Psychiatric:

- 33 Geriatric Evaluation and Management Psychiatry
- 39 General compensated Work Therapy/Transitional Residence (CWT/TR)
- 70 Acute Psychiatric
- 71 Long-term Psychiatric
- 92 Psychiatric General Intermediate
- 93 High Intensity General Psychiatric Inpatient
- 94 Psychiatric Observation

Specialized Psychiatric:

- 84 Psychiatric-Substance Abuse Intermediate Care
- 89 STAR I, II, III Program (Inpatient Rehabilitation Unit)

Substance Abuse & PTSD:

29	Substance Abuse CWT/TR
38	PTSD/ CWT/TR
72	Alcohol Dependence-High Intensity
73	Drug Dependence-High Intensity
74	Substance Abuse-High Intensity
79	Special Inpatient PTSD Unit
90	Substance Abuse Star I, II, III Program
91**	Evaluate and Brief treatment-PTSD

** Bed section discontinued or has very few discharges

Outpatient (by clinic stop):

137	Alcohol counseling
143	Persian Gulf counseling
165	Bereavement counseling
292	Observation Psychiatry
501	Homeless Mentally Ill Outreach
502	Mental Health-Individual
503	Mental Health Residential Care
504	PCC Med Center Visit
505	Day Treatment-Individual
506	Day Hospital-Individual
507	Drug Dependence-Individual
508	Alcohol Treatment-Individual
509	Psychiatry-Individual
510	Psychology-Individual
511	Neurobehavioral-Individual
512	Psychiatry consult
513	Substance Abuse-Individual
514	Substance Abuse-Home
515	CWT/TR-Homeless Chronically Mentally Ill (HCMI)
516	PTSD Group
517	CWT/Substance Abuse
518	CWT/TR Substance Abuse
519	Substance/PTSD Teams
520	Long Term Enhance-Individual
521	Long Term Enhance-Group
522	HUD-VA Shared Housing
523	Opioid Substitution
524	Active Duty Sexual Trauma
525	Women Stress Treatment
526	Telephone Special Psychiatry
527	Phone General Psychiatry
528	Phone/Homeless Mentally Ill (HMI)
529	Health Care for Homeless Veterans/ HMI

530	Telephone/ HUD-VA Shared Housing
531	Mental Health Primary Care Team-Individual
532	Psychiatry/Social Rehabilitation-Individual
535	Mental Health Vocational Assistance
536	Telephone/Mental Health Vocational Assistance
537	Telephone Psychiatry/Social Rehabilitation
538	Psychological Testing
540	PTSD consult/Liaison Team-PTSD Clinical Team
541	PTSD Clinic
542	Telephone PTSD
543	Telephone Alcohol Dependence
544	Telephone Drug Dependence
545	Telephone Substance Abuse
546	Telephone/ Mental Health Intensive Case Management (MHICM)
547	Intensive Substance Abuse Treatment
548	Substance Abuse Day Hospital
550	Mental Hygiene-Group
551	IPCC community Clinic/Day
552	Mental Health Intermediate (MHICM)
553	Day Treatment-Group
554	Day Hospital-Group
555	Drug Dependence-Group
556	Alcohol Treatment-Group
557	Psychiatry-Group
558	Psychology-Group
559	Psychiatry/Social Rehabilitation-Group
560	Substance Abuse-Group
561	PTSD Clinical Team (PCT) PTSD-Group
562	PTSD-Individual
563	Mental Health Primary Care Team-Group
564	Mental Health Team Case Management
571	Readjustment counseling-Individual
572	Readjustment counseling-Group
573	Mental Health Incentive Therapy-Group
574	Mental Health compensated Work Therapy-Group
575	Mental Health Vocational Assistance-Group
576	Psychogeriatrics Clinic-Individual
577	Psychogeriatrics Clinic-Group
578	Psychogeriatrics Day Program
579	Telephone/Psychogeriatrics
580	PTSD Day Hospital
581	PTSD Day Treatment
589	Non Active Duty Sexual Trauma
590	comm. Outreach to Homeless Vets by Staff Other than HCHV

*Please note that the percentage of patients (55%) with the diagnoses 296.2 or 296.3, as shown above, was obtained by counting all patients with either diagnosis at any time during FY02. This process allows for individual patients who had both diagnoses in the same year to be counted twice. When such patients are excluded (6%), the resulting figure of 49% is the percentage of patients that have a diagnosis of 296.2 and/or 296.3 in FY02.

Appendix B : VERA Price Groups

ASSIGNMENT OF VERA PATIENT CLASSES TO VERA 10 PRICE GROUPS		
	VERA Price Groups - **Basic**	VERA Patient Classes
1	Non-reliant Care	Compensation and Pension Exams
		Employee/Collateral
		Pharmacy
		Non-vested
2	Basic Medical	Ear, Nose, and Throat
		Other Acute Disease
		Endocrine, Nutritional, Metabolic Disorders
		Central Nervous System
		Musculoskeletal Disorders
3	Mental Health	Acute Mental Disease
		Addictive Disorders
4	Heart/Lung/GI	Cardiovascular Disease
		Gastroenterology Disorders
		Pulmonary Disease
5	Oncology/Infectious Disease	Hep C w/o drug therapy
		HIV w/o drug therapy
		Oncology
6	Multiple Medical	Medical + Psych + Sub Abuse
		Psych + Substance Abuse
		Multiple Medical
		PTSD Acute
	VERA Price Groups - **Complex**	VERA Patient Classes
7	Specialized Care	Hep C with drug therapy
		HIV with drug therapy
		PTSD Chronic
		Home Based Primary Care
		Traumatic Brain Injury
8	Support Care	Stroke
		SCI Para - Old Injury
		Domiciliary
		SCI Quad - Old Injury
		Blind Rehab

		Community Nursing Home
		Low ADL
9	Chronic Mental	Mental Health Intensive Care Mgmt
		Other Psychosis
		Substance Abuse
		Schizophrenia and Dementia
10	Critically Ill	SCI Para - New Injury
		Behavioral
		Clinical Complex
		End Stage Renal Disease
		Physical
		SCI Quad - New Injury
		Rehabilitation
		Specialized Care
		Transplants
		Ventilator

Appendix C: Psychotropic Medications

Class	Drugs Included in Class
Alcohol Treatment	disulfiram, naltrexone
Antiparkinson/Antihistamine	diphenhydramine, benztropine, trihexyphenidal, biperiden, procyclidine, hydroxyzine
Benzodiazepines	alprazolam, chlordiazepoxide, clonazepam, clorazepate, diazepam, estazolam, flurazepam, halazepam, lorazepam, oxazepam, prazepam, quazepam, temazepam, triazolam
Antianxiety	buspirone, chloral hydrate, zolpidem, zaleplon
Mood Stabilizers	carbamazepine, oxcarbamazepine, divalproex, felbamate, gabapentin, lamotrigine, topiramate, valproic acid, lithium
Antidepressants	amitriptyline, desipramine, doxepin, imipramine, clomipramine, nortriptyline, phenelzine, tranylcypromine, bupropion, citalopram, fluoxetine, nefazodone, paroxetine, sertraline, trazodone, venlafaxine, mirtazapine (fluvoxamine)
Antipsychotics	*First-generation*: chlorpromazine, thioridazine, mesoridazine, loxapine, molindone, perphenazine, fluphenazine, haloperidol, thiothixene, trifluoperazine, pimozide *Second-generation*: clozapine, ziprasidone, risperidone, quetiapine, olanzapine, aripiprazole
Stimulants	dextroamphetamine, methylphenidate
Anticolinesterases	donepezil, rivastigmine, tacrine

Appendix D: Cost Data

The Allocation Resource Center (ARC) in Braintree, Massachusetts, provided cost data for each patient by facility and cost center. The ARC database is an integrated, costed, clinical database for all veterans receiving care in a given fiscal year. ARC's basic approach is that patient costs = (patient workload) x (unit costs). Patient workload is estimated from a broad set of data resources. The ARC data sources include the Patient Treatment File, the Patient Assessment File, the Immunology Case Registry, the Fee Basis File, Home Dialysis, the Outpatient Care File, Outpatient Pharmacy data, HCFA, and the cost Distribution Report. The ARC estimates each patient's portion of the total resource utilization and applies that proportion to unit costs, which are based on Decision Support System (DSS) data. ARC cost estimates encompass direct and indirect costs, excluding capital expenses. Note that in FY99 and FY00 the ARC derived costs from cost Distribution Report data (CDR). This report presents ARC cost estimates for FY02 derived from DSS costs data.

A patient's total costs are assigned to the station at which they had the most utilization. Service location costs are aggregated into 15 groups. For the purposes of this report, the following 3 groups were included in the analysis.

ARC FY02 Cost Data:

Group 1: Medicine

- Blind Rehab
- Neurology GEM
- Rehabilitation
- Rehabilitation GEM
- Spinal cord Injury
- Neurology
- MedicalICU
- Medical GEM
- Medicine
- Epilepsy Center

Group 2: Surgery

- Operating Room Procedures
- Surgical ICU
- Surgery
- Transplant Team costs

Group 3: Psychiatry

- Eval/Brief Trmt PTSD
- Psychiatry
- Psychiatry GEM
- Psy General Intermediate
- Psy Subst Intermed
- Spec Inpt PTSD Unit
- Sustained Trmt and Rehab
- Substance Abuse STAR
- Substance Abuse

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